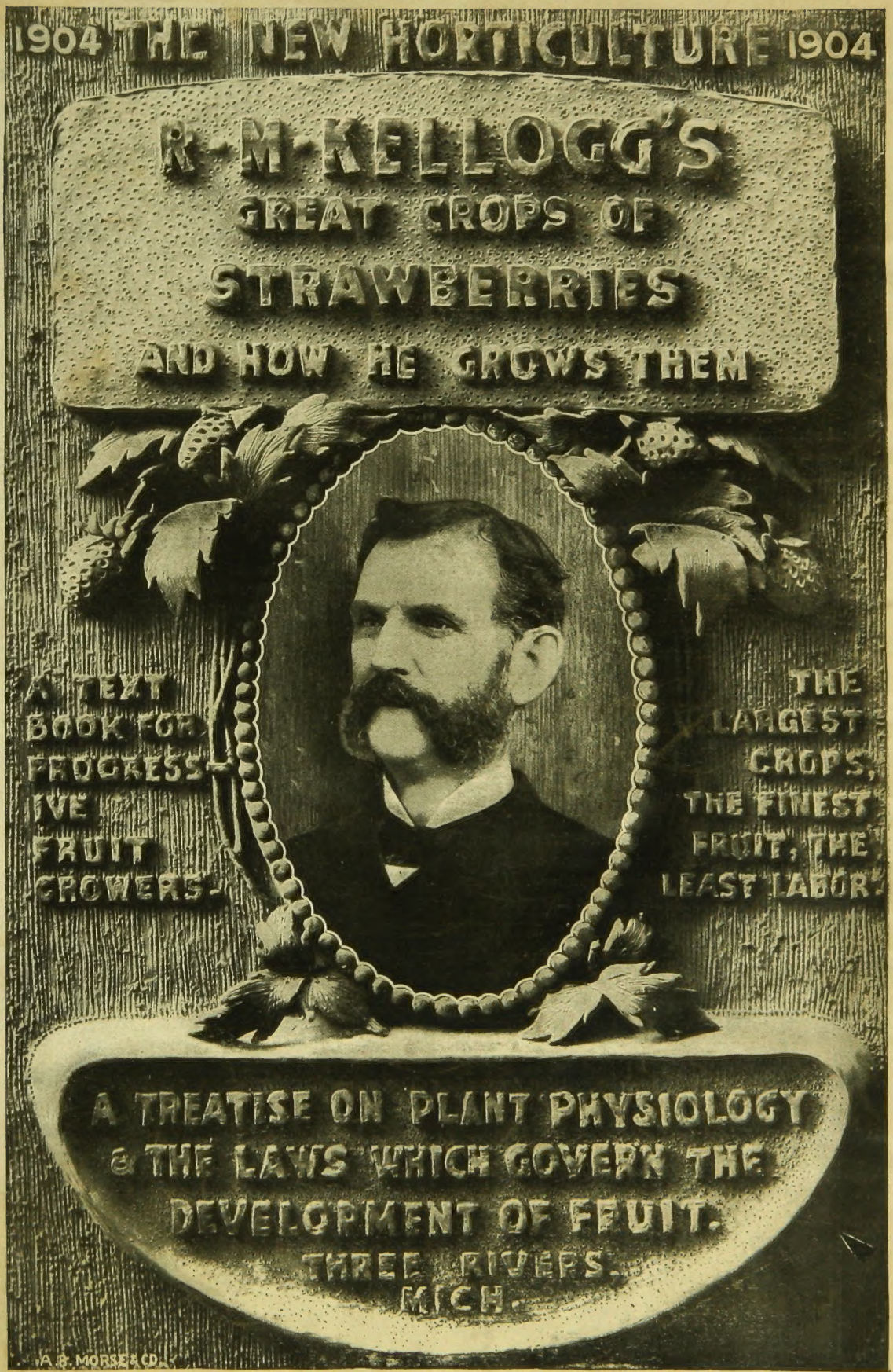

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PEDIGREE.

The Pedigree of a plant must be known in scientific propagation because it requires several years to breed up and develop it, and the line of ancestry must not be broken by propagating from any weak plant.

A THOROUGHBRED PLANT.

A Thoroughbred plant is one possessing the best characteristics of its variety, the result of growing them continuously under the most favorable environments and accumulating good qualities through annually selecting the desirable variations and discarding weaklings and restricting to prevent pollen and seed exhaustion, thus preserving a perfect balance between vegetative parts and its fruit-producing organism.

THE PEDIGREE OF THESE PLANTS.

The pedigree of each plant offered in this catalog, unless otherwise stated in the description, shows the ancestsy in lineal ascent to have been thoroughbred as above stated, and they are believed to be perfect in their physical and fruiting organism in all respects.

MONGREL PLANTS.

Mongrel plants are those grown under ordinary conditions, without any systematic selection of bud variations, and for the want of proper restriction are more or less pollen exhausted and therefore have a strong tendency to make runners rather than strong fruit buds. They do not give uniformity or quality to fruit under any system of tillage that can be used.

THE CAUSE AND EFFECT.

I have pointed out the cause of unfruitfulness in plants and given the effectual remedy as proven by repeated definite experiments which may be summed up as follows :

The most congenial environments to induce better variations and continuously selecting those making the greatest improvement and keeping them under restricted fruitage to develop their fruit producing organism. These methods have met the warmest approval of the highest horticultural experts in the country, and especially that of the International Conference of Plant Breeders. I have been the pioneer in this work and have the only establishment in the country having perfect conditions for plant breeding.

STOCK FOR PROPAGATION.

We make a specialty of furnishing fruit growers with Thoroughbred Plants for their propagating beds from which they can grow perfect plants which are able to respond to high culture with large berries and plenty of them as well as for general planting.

THE DEMAND.

Up to this time the demand has been beyond our ability to supply. Wherever they have been seen in fruit under good cultivation they have created a sensation, and in order to meet this demand I have discontinued propagating all other plants and this year offer a stock several times greater and much finer than ever before, but indications are that the rush for them will be equally great and so orders must be filled in the rotation received. Orders should therefore be booked as early as possible. Our customers are always leaders on the markets.

THE PHOTOGRAPHS.

Typical specimens of each variety were photographed in the season of 1902 and engraved to show the size and form of the berries of different varieties, but the camera cannot do them justice as the beautiful color, delicious flavor and firm texture cannot be put in the picture.

The seeming uniformity of berries of different varieties arises out of continued selection of those approaching the most nearly to the ideal type. It is the result of skilful propagation through a series of years.

Copies of this book will be sent free to any four of your friends with your name and compliments written on each book so they will know that you sent it. Send in their names. They must be persons interested in berry growing.

VISITORS.

Visitors are most cordially welcomed at our grounds at any time. You will be entertained free and conducted through the grounds by myself or superintendent. See article on free excursion and ten dollars per day.

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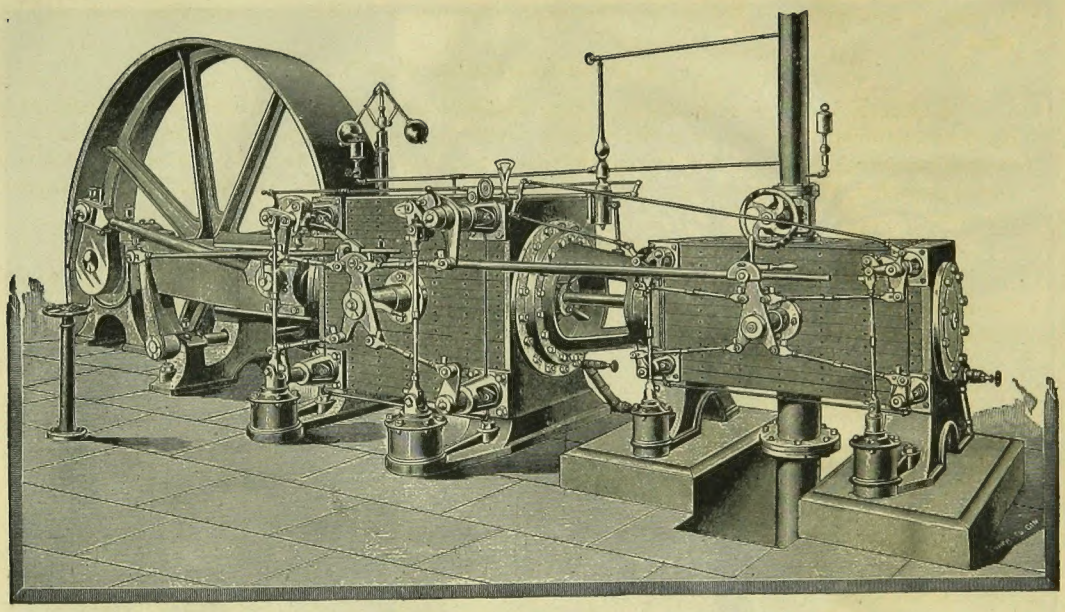
A. B. MORSE CO., CATALOGUE PRINTERS
St. Joseph, Michigan.



COMPOUND ENGINES AND STRAWBERRY PLANTS.

Until within the past few years every steam engine wasted a large part of the power developed in the boiler. The engineer said no engine would ever be built which could use the same steam twice, but they are doing it now. So too, the strawberry plant having in its body crude machinery, wasted the "steam" and pressure of the "boiler" (manure and tillage). It is not so now. New "machinery" has been developed in the plant which turns all waste into "Big, Red Berries." Read carefully, slowly, think hard, study each line and you will know the why, which, how and when about it.

The engine of a great factory refused to work. Heat the boilers as hot as they could, the engine would barely turn the machinery. The engineer worked hard for days to find the cause while the impatient army of employes lost their time and wages and the owners their dividends until finally it was decided to send for an expert. Within two minutes after his arrival he discovered a valve out of order and quickly adjusted it and directed the steam to be turned on and instantly great power was developed and the hundreds of employes rushed to their places and the work began in earnest and the delighted manager called for the expert's bill who named fifty dollars as his charge to which the manager promptly demurred, saying he was not authorized by his company to pay anybody fifty dollars for two minutes' work and directed him to make out a bill for the consideration of the board of directors. The following was the bill rendered:

To fixing engine.....	$ .25
To knowing how to fix it.....	49.75
Total.....	$50.00

The manager at once ordered the bill paid declaring twenty-five cents was very low for fixing the engine and $49.75 was a fair compensation for knowing how since it had required many years of hard study to become an expert.

The strawberry plant is an engine and machine for manufacturing berries and when its parts get out of order it cannot use the power generated by the boiler (manure and tillage) and so the products must be small and of inferior quality until the valves are readjusted, when great power will be developed and utilized as it is in the factory mentioned.

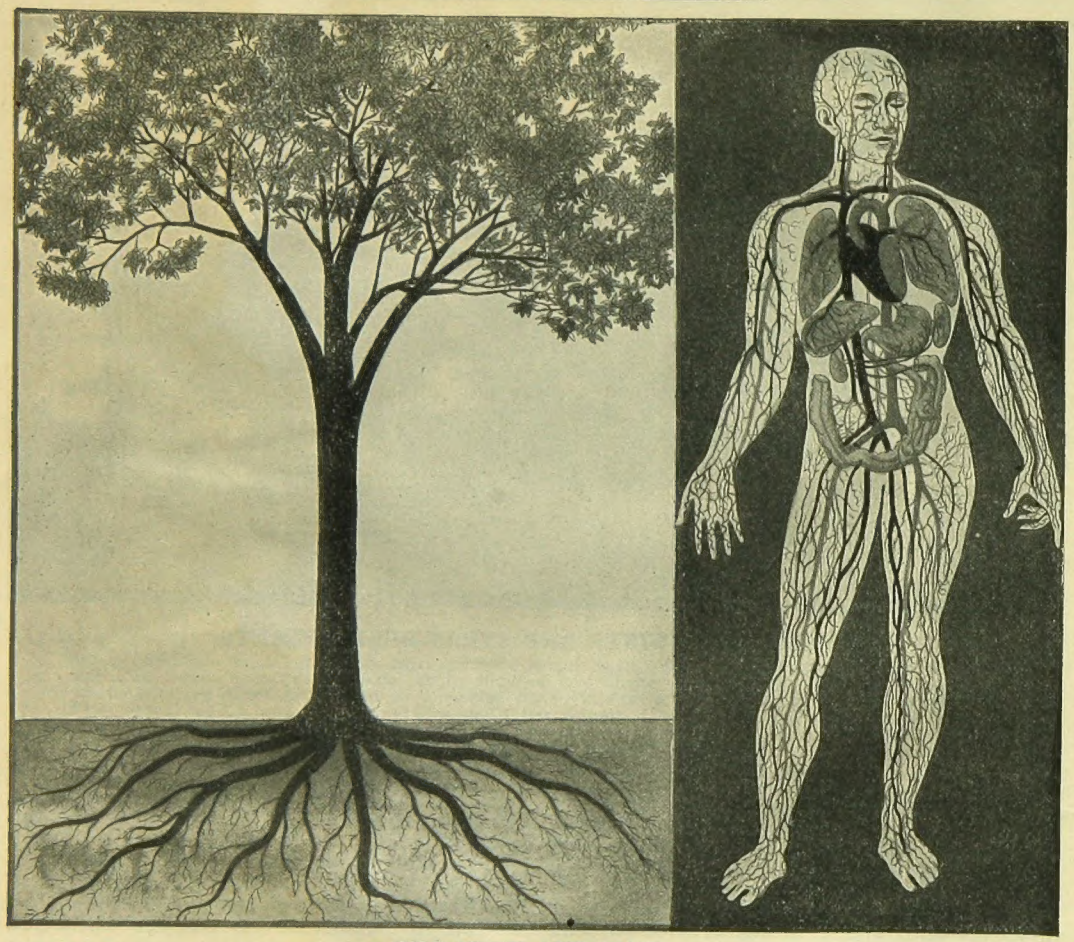
This book is written to explain how to adjust the "valves" and how to fire the "boiler" so the products may pay the workmen and declare dividends; also to tell you where you can get the perfect machines (plants) to start your "factory."

You must know something of the physiology of the plants and the cause which produces results and therefore you must read this book page by page, think hard and re-read until you catch the full meaning.

PLANT LIFE.

We do not know what life is any more than we know what electricity is. We know that life exists in a substance called protoplasm and is never found in anything else. It is conclusively proven by scientists that the protoplasm in the plant is identical with that in the animal. It is also shown that the body of plant or animal is nothing more than a machine for making protoplasm and when the machine gets out of order so that the protoplasm is not suited to sustaining life, we say we are sick and the doctors administer medicines known to have a stimulating effect on the diseased organs and if the vital parts become involved so protoplasm seriously changes, life moves out and this is what we call death.

The causes which lead to sickness and death in plants and animals are not materially different. The bodies of plants and of animlas are composed of the same chemcial elements.



THE TREE AND MAN.

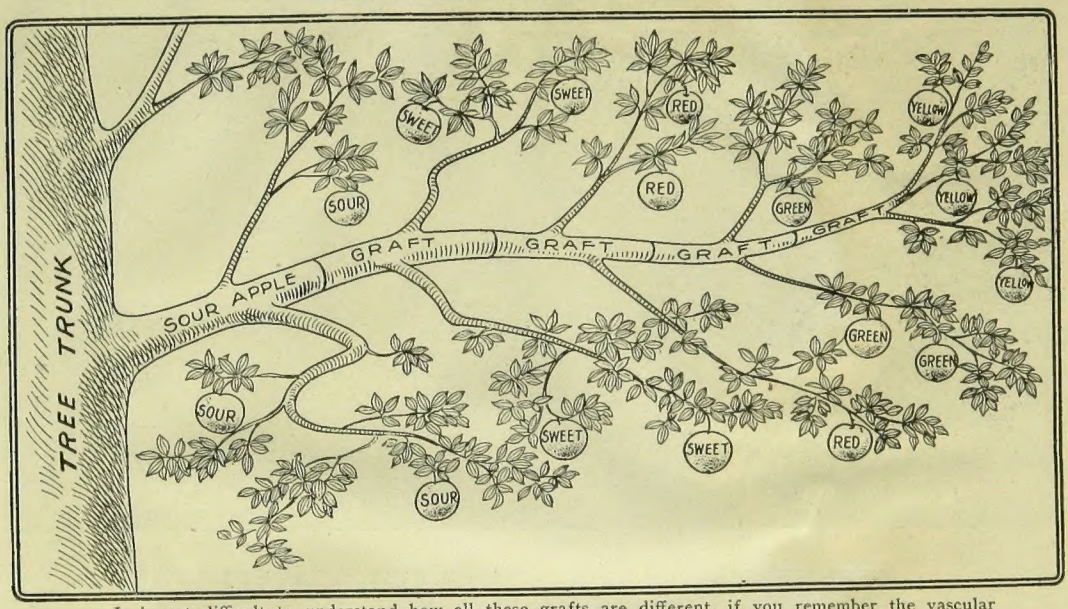
These engravings are introduced here to teach you an important lesson. You must understand that the machinery for building our own bodies is almost identical to that which builds up the plant. While it is true that the different parts of this complex machinery are dependent on others, yet one part may become weak and another part strong by different treatment. We shall see in the following pages how the seed and fruit producing organs can be developed and kept in a condition to use the vegetative part of the plant as a supporting machinery for manufacturing Big Red Berries instead of the mass of small berries and profusion of runners and foliage found on the plants of the average grower. You will see how we can guide the growth of the plant, making it take any form we may desire. This is what thorough breeding means.

The plant eats manure and the animal eats the plant and when the animal dies, its flesh is put back into the ground to be eaten in turn by the plant. So-called commercial fertilizers are largely made of the blood, bones and flesh of animals.

TREE AND MAN.

Some people object to using plants and animals in comparison and this objection arises out of a lack of knowledge concerning the close resemblance of their anatomical parts. The only reason I do so is that most people are familiar with the anatomy of animals and it is easier to explain by comparison. To make this more clear, I secured the services of an anatomical artist who prepared a chart expressly for this book showing the digestive and assimilating organs of both a man and a tree and will point out how any part of either may be strengthened by substantially the same means.

Let us see how the man grows or how his body is built up. Observe how he takes his food at the mouth, passing it to the stomach, thence to the intestines, liver and lungs where it is converted into blood, a substance which contains all the materials for building up the body. The heart now forces this pure blood through the arteries to all the tissues of the body. Our bodies are literally filled with workmen which are called glands, taking the materials out of the blood and building up the bone, flesh and sinews just like a lot of carpenters, stone masons, brick layers, plumbers and plasterers building a house. These workmen in our bodies are divided in the same general way. Some build the bone, others the flesh, and still others the sinews. The especial point to note is that each class does its special work just as the house builders do and cannot swap jobs.



It is not difficult to understand how all these grafts are different, if you remember the vascular systems (or glands) are different in each scion. The cellulose or assimilated sap in each graft passes through the others and is precisely the same; but the secreting glands being unlike, the combination for each fruit is different in each. One graft may become unfruitful without affecting the others. It is the same in the strawberry runners. The vascular fruit producing system of one may change without affecting the others, showing the necessity of systematic selection and restriction in propagation.

Now look at the tree. It has the same organism but operated in a little different way. It takes its food from two sources, about five per cent. coming from the ground and ninety-five per cent. from the air. Its soil foods are dissolved in water, sucked up by the roots and passed up through the center of the tree by a force known as osmosis until it reaches the leaves which contain machinery corresponding to that in our stomach, intestines, liver and lungs. When we burn two cords of wood we get a bushel of ashes. Wood and coal are carbon. In the burning, the oxygen of the air chemically unites with the carbon of the wood and forms a gas known as carbon dioxide. Now the leaves have the ability to separate the oxygen from the carbon, throwing the former back to the air and taking the carbon into the plant's system and combining it with the soil elements and making it into cellulose or elaborated sap which is nothing else than the plant's blood. Now this blood passes out of the leaves, going downward towards the roots where are stationed the workmen (called vascular bundles, but really glands), taking out of the sap the materials for building the wood, bark, leaves, roots, fruit buds and every part just as it does in the man.

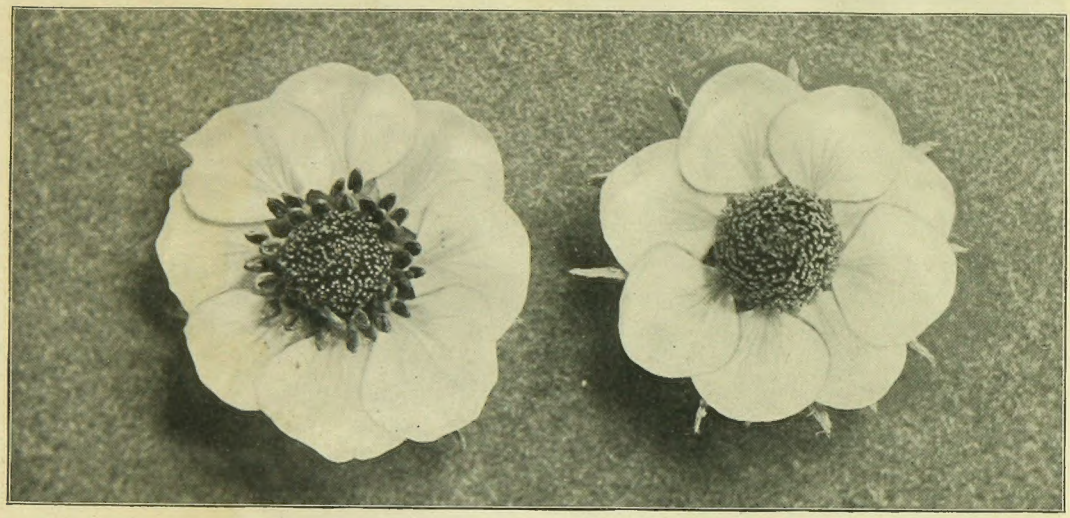
Now, the especial point to note is this. Any one of these different sets of workmen, glands, can be stimulated into especial activity and one part of the animal or plant can become strong and another part weak. Note more especially that the set of glands which produces the vegetable part may be especially vigorous and that part which builds the seeds and fruit flesh may be weak in which case we should have a strawberry plant all going to leaves and runners without a corresponding amount of fruit. Then again, the fruit organs may be too vigorous and not supported by proper vegetable parts in which case the fruit would lack size and quality. Now, since the object is to show how plants may be improved and the different parts strengthened so as to meet the requirements of man and since the analogies are so close and most people are somewhat familiar with the anatomy of animals, there is no reason why the two structures cannot be used to make the matter clear.

INDIVIDUALITY OF PLANTS.

God never created two things just exactly alike. Man never made two things exactly alike. There are not two blades of grass or two grains of sand in the world exactly alike. There is an individuality about everything and all these are constantly changing, We greet our friends with, "How de do. How is your health and that of your family." We know that the physical organism is constantly changing, We are well this morning and sick this evening.

Plants are identically the same. This week our plants are growing nicely in all their strength and vigor ; next week they encounter exhaustive work in pollen secretions and the gland system which does this work is overtaxed and made weak. Next the gland system which makes the seeds and puts into them the consolidated life germ is worked to exhaustion. Next comes the fruit flesh building glands. The great, luscious berry must be built up and finished and when all this work is done, the plant so perfect and strong in its organism in early spring is wasted by the burden of fruitage.

All the embryo organs are left, but they are sorely depleted and weak, but by well directed



BI-SEXUAL B

Perfect flower. It has both stamens and pistils and therefore fruits alone without regard to the presence of other varieties. Insects carry pollen to pistillates.

PISTILLATE FLOWER P.

It has no male organs and produces no pollen, therefore must have a male (B) flower set every third row so wind or insects will carry pollen to it.

tillage they are strengthened during the fall and if resources are abundant will have their machinery in the buds and foliage well up; but mark, it will not be equal to the first effort. It will hardly repair all the damage resulting from the great strain. Now, another effort; a good crop perhaps and the organism is strained further and again rebuilt during the summer and for a third time attempts to grow big berries, but alas, the machinery of the plant like the old and worn out engine will not respond to heavy work and when the crop is ended we may well say the plant's machinery is worn out and we plow it under.

Why plow it under? If we clean out the alleys, runners will come out and root and we may renew the bed from these. They would be new plants possessing the same vascular system possessed by all the plants of that variety no matter in what parts of the world the individuals were scattered.

Pity to the man who cannot be made to see that the gland system of an impaired and weakened plant is transferred to the new creation just as it is in the immediate plant from which it came.

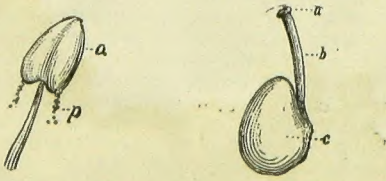
The soldiers of 1861 to 1865 lay on the cold, wet ground night after night often with scanty food in quality and quantity; they saw the horrible sights of battle when comrades were torn by shot and shell; they endured the long and painful marches and their whole nervous systems were utterly wrecked. No matter how they lived after peace was restored, their physical organism was broken and they could never regain their original strength. As a rule, those men live longest who live under the best environments or have the least strains and shocks which deplete the system.

Plants are not an exception to the rule and since varieties are preserved by division it is of the utmost importance that the organism so divided shall be such as can respond to the generous treatment with equally generous returns.

SEX IN PLANTS.

All plants are male and female and have perfect sexual organs with all the counterparts found in animals and fecundation takes place between them substantially in the same way.

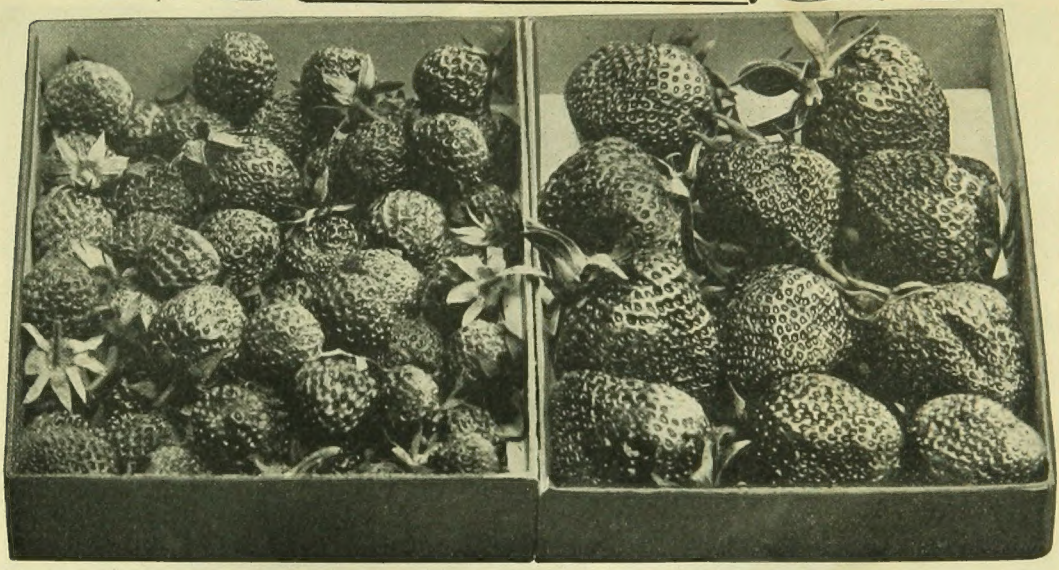
The seeds are the eggs of the plant and contain the two merged life germs kept in dormant state just as the germ in a bird's egg remains dormant until warmed by incubation. The seed is put in the ground where moisture and sunshine stimulate it into activity. Thus both develop and bring out the new beings after their kind.



The Stamen. (Male organ) **Pistil.** (Female organ)

The sexual organs of the strawberry enlarged to show the process of fertilization. The anther of the stamen bursting, letting the pollen containing the male life germ "a" fall out, lodging on the stigma of the pistil "a", where the life germ of male is carried by a tube through the style "b" to seed pod or ovaries "c," where the female germ is located, and here the two life germs are merged into one in the seed (egg). It is substantially the same process in all animal life.

The fruit flesh which we are after grows only as a substance for the seeds to develop in. The gland system which builds the fruit flesh cannot perform its work unless the seed forming glands prepare the way for the seed



MONGREL PLANTS. **PEDIGREE PLANTS.**

Just a quart of berries in each. The difference in berries grown from common or mongrel plants and thoroughbreds is well illustrated by this photograph. The difference in size, productiveness and quality is very great, and it is this that gives you the command of the market. People will take a great deal of trouble to get such berries as are seen on the right, and in the family garden they afford a world of delight.

building organism to work. We know this because whenever fertilization fails no fruit flesh develops. If you should set an acre of all pistillate varieties they would bloom full and you would think a great crop was in sight, but you would soon see the flowers drop off and no berries could be found. The banana, pineapple, naval orange and some other fruits have no vital seeds and they are regarded as freaks. They have rudimentary seeds which stimulate into activity the fruit flesh glands and I call especial atention to the fact that all these seedless fruits never suffer from over bearing, but if sustained by manuring and tillage will bear just as good crops the year following. The amount of fruit depending merely on the capacity of the trees.

The especial and important point for you to note is that the development of fruit not only depends on conception, but upon the potency or vigor of the consolidated life germ for wherever the vitality of these two life germs (father and mother plant) is low, the berries will be numerous but always small and deficient in quality.

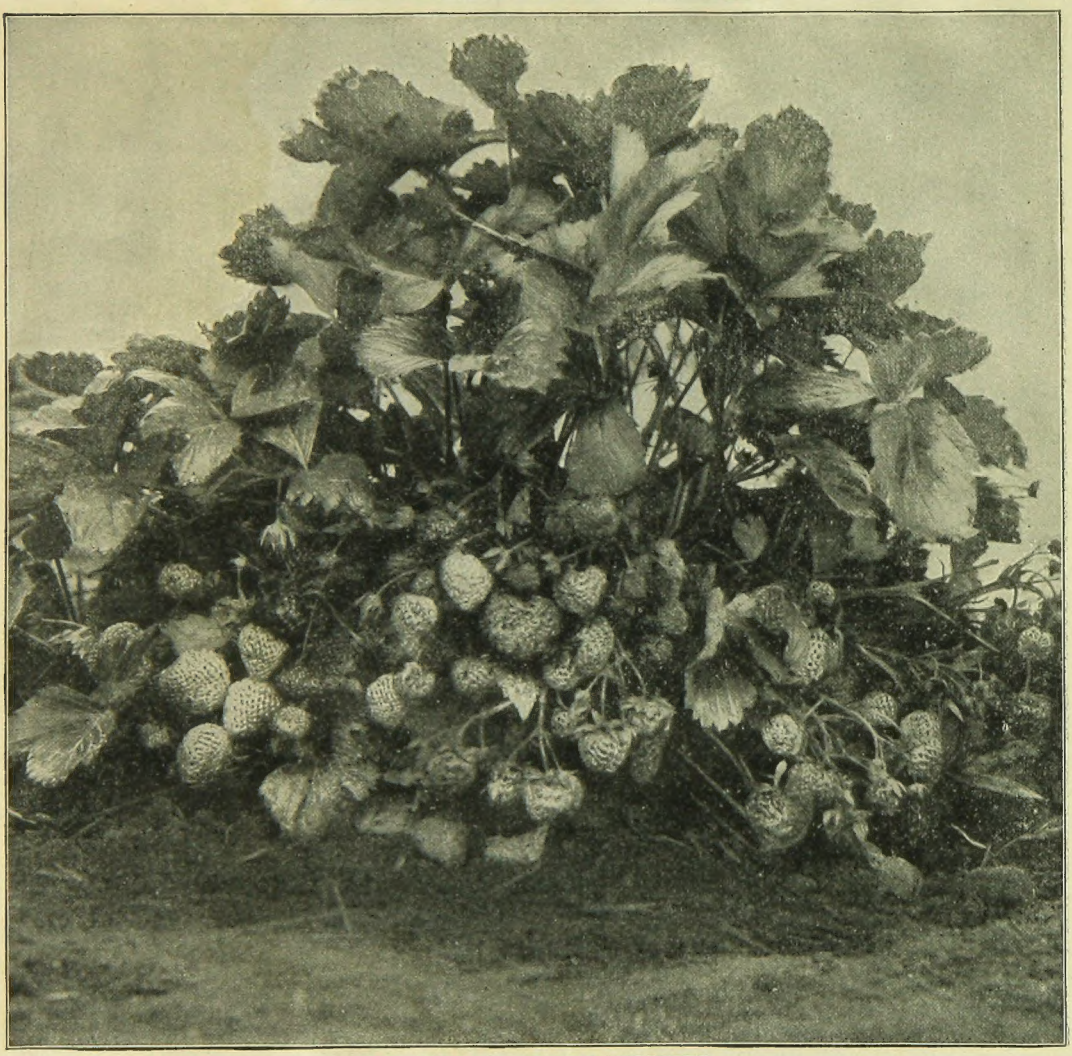
We know the violent passion for breeding possessed by animals and the fact that all stock breeders limit them so that they will not become seminally exhausted for in this case the offspring would be very inferior in all respects.

This seminal exhaustion takes place in plants in identically the same way. Now take a vigorous and heavy fruiting raspberry field. Omit the annual pruning for one year and see what a splendid crop you will get. Now, prune it and manure it and next year cultivate it as much as you please and see what light crops of berries you will get for several years to follow. If you prune closely, of course it will gradually recover, but for want of restriction this one year you would lose heavily on succeeding crops.

You notice in the orchard when it blooms so full, when every twig is loaded with blossoms, that the fruit is always inferior and heavy crops will not occur again for several years which may be attributed to pollen exhaustion; but if you properly restrict it by pruning or cutting off surplus buds, so it will not become seminally weak, it will bear good crops of fine fruit every year. Every grower of grapes knows that he must cut off fully five-sixths of his wood and buds every season to get high grade fruit and this is always done in the winter or early spring before excessive pollen secretions take place. "Bearing itself to death," is a common expression among fruit growers, but few persons understand the waste of body of both plants and animals arising out of excessive breeding. All our physicians understand why we have so many deformed persons, mentally and physically, and why we have to maintain so many prisons for the vicious and asylums for mentally weak persons; and the veterinary can explain the source of the miserable scrubs which infest our barnyards. The whole is explained in two words; viz., excessive breeding.

The strawberry plant left to itself throws its whole energies into this sexual function of seed production and consequent fruit and gradually its seed organs waste away until its fruit is small and inferior and then we say it has run out.

It is only within the last few years that strawberry growing has been made profitable. At first the grower fruited his beds several years until it needed renovation and manuring and then he fitted new land, went to the old bed for plants and after repeating this once or twice he got little fruit and gave up the business in disgust.



PHYSICAL DEVELOPMENT.

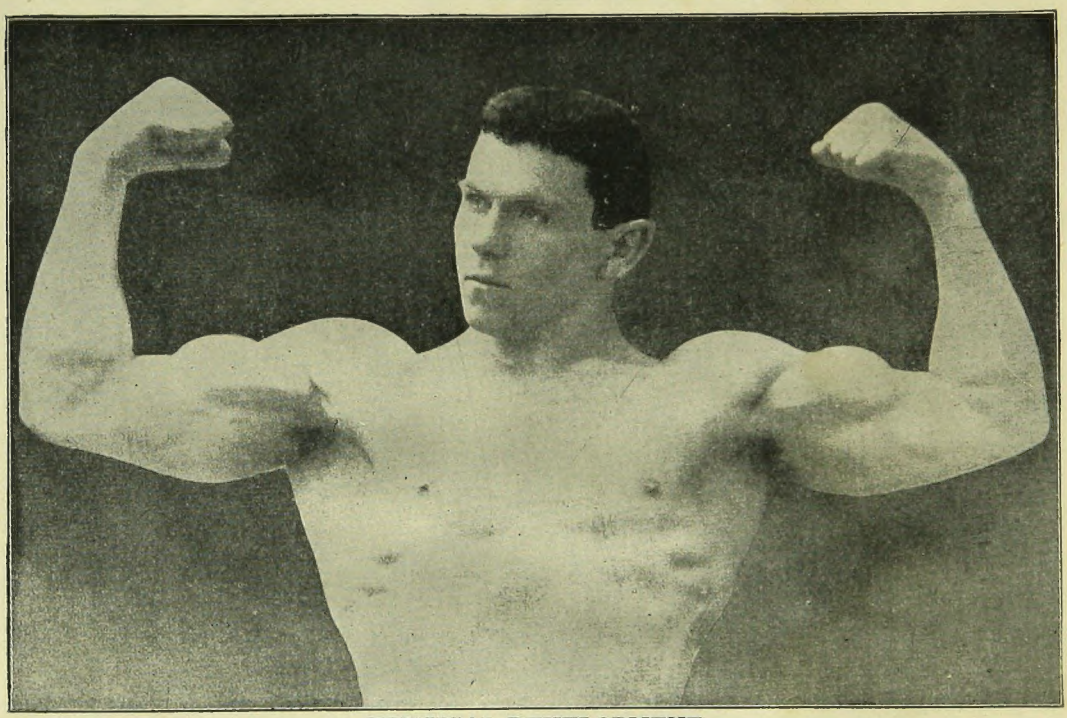
The enormous productiveness of these plants is the result of scientific development. Physical exercise in bearing fruit, with continual selection and restriction have stimulated the fruit producing vascular system just in the same way the powerful muscles of the man on the opposite page are built up.

The boom in strawberry growing came when an eminent horticulturist pointed out that better results would follow by taking plants from yearling beds which had borne no fruit and remove all blossoms the first year. This was a big improvement and seedlings of quality did hold out longer because the exhaustive and devitalizing process of pollen secretions was avoided, but for the want of physical exercise in the breeding functions they gradually grew weak and unfruitful.

This was greatly hastened by the fact that fruit growers persisted in taking the immature tip plants or those which ran out in the alley between the rows. These plants form so late in the fall they have no time to complete the development of their fruit organs and as the blossom buds were not removed until after the mischief of excessive pollenation had occurred there soon came to be the greatest difference in fruiting ability and the running out process went on very fast.

During all these years there has been a clamor for new and more productive seedlings and fabulous prices were paid for them and for a few seasons they shone like a meteor in the horticultural heavens; but soon began to grow dim because of the wasting away of their fruit organs and like their predecessors, in their weakened condition, fell an easy victim to insect, fungi and all the ills plant life was heir to and so were discarded.

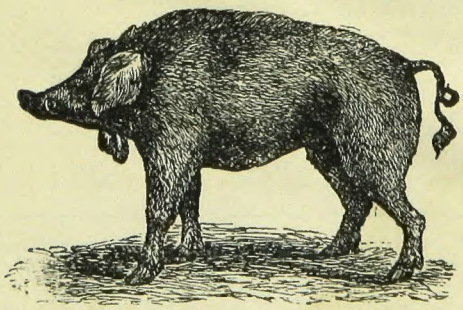
If there were no changes in the fruit organs of plants arising out of excessive pollenation and seed formation you could continuously renew from the old bed by taking new runners indefinitely; but in all such experiments it has been shown that the strength of the plant would all go to runners and foliage and not to fruit, showing conclusively that potency of pollen and pistil fluids are the prime factors in growing large berries of quality.



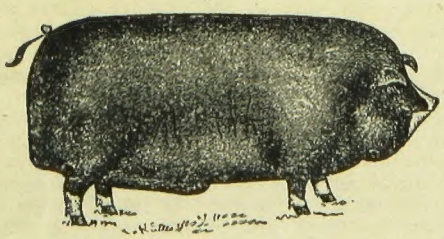
PHYSICAL DEVELOPMENT.

The powerful muscles of this man are not natural. They are the result of scientific development. Physical exercise properly restrained stimulates the muscle building glands just as continuously selecting strong fruiting plants for propagation with proper restraint to prevent pollen and seed exhaustion, strengthens the fruit organs of the plant.

IMPROVING PLANTS AND ANIMALS.



The Original Hog.



Bred up by Selection.

We have shown that the body building of the plant goes on by substantially the same sysem of glands used in the animal. That the organism of the plant is equally complex and that every part of its anatomy may become disarranged or in other words, the plant may become sick, paralyzed or inefficient and that death in both cases is caused by lack of sustenance to the protoplasmic substance in which life lives. There is no argument along this line so far as the animal is concerned, but the evidence adduced shows the equal plasticity of plants and nothing but granddaddy blindness has held back plant improvement so long.

THE PLANT DOCTOR.

We do not need a plant physician because the cost of the fees would be greater than the value of the plant. Better to plow them under and re-set with perfect plants. We must have persons skilled in detecting variation, for these are often so slight that only a trained eye would notice them. The reputation of a plant breeder for skill counts for as much as that of a judge at a poultry show. No two judges scale a chicken just the same, but the verdict of the one known to possess the greater skill is accepted as final. So with plants.

The great majority of plants will be healthy and strong, especially if restricted to prevent seed exhaustion and are well fed and protected from encroachments of other plants.

Selection of the plants having the best changes in their vascular system and rejection of those showing weakness is the only physician we need. If, however, you think plants are not susceptible to medical treatment and never get sick, just put a quantity of salt in the ground, strong hen manure,

THESE ANIMALS WERE GROWN IN TEXAS

and exhibited at the Fat Stock Show in Chicago, in 1902, to show by comparison the wonderful improvement by skillful breeding in the cattle of Texas. These animals were merely multiplied in their own way, just as the average nurseryman propagates strawberry plants. They are "Natural Fruit" with a gland system which converts their food into skin, gristle, bone and a flesh so tough it can only be sold in cans after a long cooking under a high pressure of steam. They are hard to sell even at the lowest price. No amount of feeding and care can make them produce the quality of beef found in the thoroughbred animal. The more you feed the more gristle, bone and skin you get without a corresponding increase in the quality of flesh. You cannot take a common scrub plant propagated at will and without a well developed fruit organism and grow Big, Red Berries. It cannot be done. Its organism is such that the more you manure and cultivate it, the more runners and leaves you get without a corresponding increase in fruit.

acids, and many other things and see how quick plants will show the effects.

If there is no such thing as changing the organism of plants, why do we have plant breeding classes in our Agricultural Colleges? Of course, it is a recent thing, but, bless you, twenty years ago not one farmer in a thousand knew plants were male and female or scarce anything about their physiological parts. They were granddaddy blind and followed in the footsteps of their ancestry and indeed felt the absolute necessity of the bag-stone on the farm. This is an age of specialists and investigation and the man who does not fall in and know the cause which produces results must ever remain a day laborer using the tool put in his hands by others.

BUD VARIATION.

Bud variation is any change in the glands of the plant which shall cause it to produce a different fruit. These variations are constantly going on in all trees and plants propagated by buds, cuttings and runners and lay the foundations for improving them.

A young man of thirty has jet black hair and smooth face. At sixty his hair is white and face wrinkled. The glands of the scalp which secreted the black coloring matter have wasted away and changes are wrought in the facial glands causing the wrinkles. This is similar to the changes in plants, but since the plant is constantly renewing itself by new creations through its buds which receive the parental vascular system, we can, by a system of selection, accumulate the characteristics we want and discard those we do not want and thus produce the ideal plant.

The rapidity of these changes is governed by the conditions under which the plant grows. A plant growing under unfavorable environments and neglect will change for the worse and become weak while one grown under perfect conditions will naturally grow strong and make changes for the better. Prof. John B.

THESE ANIMALS WERE GROWN IN TEXAS

and were exhibited at the Fat Stock Show at Chicago, in 1902, to show the wonderful improvement made by skillful breeding in the cattle of Texas. These animals are thoroughbred which means that they have developed in them a gland system which converts their food into delicious, tender beef that sells at sight at fabulous prices.

It is just the same with the thoroughbred strawberry plant. They have a gland system developed in them that converts their foods in to Big, Red Berries that sell at the same fabulous prices and the more you manure and cultivate, the more and bigger berries you get instead of the useless runners and foliage of the scrub plant. These give you cash, pleasure, reputation and a high standing in the community in which you live.

De Motte, one of the most popular scientific lecturers in one of his addresses used these words; "The constant execution of a definite function gradually effects a structural modification." Now, if we put this magnificent sentence in plainer words we shall say that properly directed exercise with a definite object in view will develop and make prominent any part of the body of plant or animal and make it permanent so it would be transmitted to offspring. The early horticultural writers taught us that there was no change in plant organism when propagated by buds and runners but they merely accepted it as a theory without investigation and nurserymen were forced to encourage this false teaching because people persisted in buying of those who could furnish the largest trees and plants for the smallest possible sum.

It costs big money to maintain a model orchard and bed of ideal perfect plants from which to propagate. New selections must continuously be made and while with the berry it can be renewed every year and good accumulations be rapidly made, yet with the orchard, it requires many years to effect a single change so they were forced to teach the false doctrine of stability of buds in plants.

This subject was brought to the attention of the American Association of Nurserymen which assembled in Detroit, Mich., last August, by that most eminent horticultural investigator, Prof. L. H. Bailey, who pointed out the necessity of model orchards and ideal berry plants from which to propagate and showed how rapidly our trees and plants were degenerating under the present system of using nursery row scions and hit or miss plant multiplying. In the discussion the nurserymen all conceded the correctness of Prof. Bailey's claims, but argued that the people would not pay a price that would justify the additional expense until they were sufficiently educated to comprehend the difference; that they were forced to adopt methods which would enable them to grow the big plants and trees for the least money until people would pay for quality. The people wanted large, smooth trees

THE PRODUCT OF A STRAWBERRY PATCH.

R. M. Kellogg's beautiful home on the strawberry farm. Only a few of the 116 magnificent maples and other trees surrounding it are shown in the photograph. Here is where the hundreds of visitors from all over the United States are entertained. Come over to Three Rivers and break bread with us. If you are a strawberry lover, it will do your soul good.

and plants and it was shown that these could not be produced from strong, bearing wood. These were generally crooked and would not attain size in the same time they would if scions were taken from non-bearing wood continuously as by tips of young trees in the nursery rows.

Did you ever notice that a tree bearing big crops of fruit was always crooked and scraggly? When scions are taken from them, the young trees have the same peculiarity and while they would come into bearing earlier and produce much better fruit, yet people do not like the looks of them. They judge by size and not by the internal machinery. It is exactly the same with plants. They want a big plant and to get it the nurseryman must propagate those with fruit organs wasted so the resources go to building up the vegetable parts.

At this nurserymen's convention Prof. Bailey made comparisons of plants and animals and urged horticulturists to study the means adopted by stock breeders for improving their animals and all present agreed that a radical change must be made; that the advancement of horticultural science was such that people would soon demand trees that possessed the machinery for making fruit of quality and not wood, runners and vegetable parts. All this is not a mere question of manure and tillage, but is one of plant organism and development of fruit glands requiring years of selection and restriction.

If there were no bud variation you could fruit a strawberry plant forever and get just as good fruit and as much of it every year provided you gave it good tillage and plenty of manure, a proposition so absurd and at such variance with the experience of every berry grower that no intelligent person would accept such teaching for a moment and yet the cheap John plant growers are still trying to force it down people's throats.

The old Wilson Albany strawberry is often cited to show that there was no such thing as variation in plants. This old variety possessed the constitutional vigor of a mule and stood more abuse, yet still held its place for more than forty years as the leading market berry; but please bear in mind that there were nearly as many strains of the Wilson as there were berry fields. It was very far from the big, luscious berry introduced by James Wilson, of Albany: It did not attain half the size it originally did and when you get the facts concerning its pedigree of the last thirty years of its existence you have conclusive proof that selection and restriction thoroughly carried out would have perpetuated this sterling old variety indefinitely. If you study this subject carefully you will see there is a variability in everything possessing life and that the basis of all improvement is selection and physical manipulation.

Expectation.

Realization.

The Strawberry; the most delicious fruit God ever created.

PROPAGATION BY SEEDS.

We cannot rely on plants propagated by seeds because there is a consolidation or merger of two life germs that of the male and another of the female and one may be much stronger than the other. If you were to plant twenty thousand seeds of the Sample strawberry fertilized by Aroma, probably not one would be better or as good as the Sample because an entire new vascular system would be created in the merger. There is a complete division of each and every characteristic of father and mother in every particular and sometimes peculiarities of even remote ancesters will appear in the new life. You have often heard the expression, "The picture of his grandfather and evidently no relation to his parents."

While delivering a lecture before the Ohio State Horticultural Society I was asked to name the best strawberry in existence. I replied it was that which had such a gland system as would in producing its seeds, build up the largest amount of fruit flesh and give it the richest flavor, best texture, most pleasing color and form. When asked for the name I replied that I did not know. We were not agreed because the conditions under which plants grow is different and their organism is affected in that way.

When we do find this ideal plant organism we perpetuate it by dividing its buds whether it be strawberry, tree or vine, because as stated, the embryo tree or plant in the bud contains the same vascular or gland system and therefore produces similar fruit no matter from what source it receives its nourishment.

PROPAGATION BY RUNNERS.

The strawberry sends out from its body a vine called runner. It forms a bud or node and protoplasm collects in it and thus a new life is formed. When leaves and roots are formed to support it the connecting vine dries up and dies and we have a new and distinct creation. The important point to note is that the new plant has the same gland system as that from which the runner came. It is the same with all trees and other plants propagated by grafting, cuttings and buds. It is called propagating asexually or without the aid of the sexes.

You have known of cases of serious burns or injury where life could only be saved by grafting the flesh of another person onto the injury. Now, suppose a surgeon grafted a piece of the scalp of a negro onto that of a white man. Wool and a black skin would always grow there and straight hair and white skin around it because the gland system in the grafted flesh would not change.

PLANT PEDIGREE.

Pedigree Plants means plants scientifically developed. The word "science" means knowledge classified, or in other words, work carried on under a well planned and defined system. The word "pedigree" means a description of the individual ancestry in a lineal ascent. All animals have a pedigree, but all animals are not called pedigree animals because the word is always used in a technical sense. It means skillful breeding. Look at the photograph of the wild steers of Texas. These are not pedigree animals because they were bred on the plains hit or miss without any direction by the trained eye and hand of man,

PLANT SELECTION.

We do not guess a plant we propagate from is the best. We know it and prove it. Its points of excellence are determined by a scale of hundredths just as a poultry judge scales the points in a chicken. Actual measurements and percentage is made at different periods and thus the varieties are all renewed from "Premium takers" each year. This is what we call thoroughbreeding.

These have no organism for converting grain and grass into fine succulent steaks. Everything goes to skin, bone and gristle. The animals on the opposite page are pedigree animals because their breeding was directed by a skillful man and are thoroughbred because thoroughly developed in the higher qualities as well as pure in blood. What a wide difference there is in the flesh of these two animals. There is the same difference in plants. One, through scientific treatment, selection, restriction, proper environments and accumulations of good variations is said to be thoroughbred and the pedigree or description of each ancestor shows that it has been carried on long enough to fix these features in the plant so it will be transmitted.

Since all our plants are bred in this way we have adapted a trade mark which is protected by common law and designates the stock we furnish as "Pedigree Thoroughbred Plants," to designate them from scrub plants or those grown like the wild cattle of the plains.

OUR BREEDING PLANTS.

We are now familiar with the physical organism of plants and are prepared to learn how the plant can be improved.

It is a law of nature that any faculty of body or mind which is never used shall be taken away. We must use it or lose it. We send our children to school where their brains shall be systematically exercised to acquire power to solve intricate problems. A child never allowed this privilege could never become a mental giant. To develop their muscle and physical powers we send them to the gymnasium.

To develop and bring out a fruit organism in a plant you must exercise it in that direction. It is doing that develops, but note the especial point that excessive doing destroys the tissues. Our asylums are full of people whose brain power has been destroyed by excessive thinking. There are scores of persons who have been ruined by overwork. The friction arising out of it is greater than the gland system can replace.

It is exactly so with the plant. It overworks its fruit producing organism and must be restrained (restricted) to the ability of its gland system to replace the parts worn out and so long as this is done the plant will grow stronger, but when you pass that line it will grow weaker and waste away.

We have already explained that plants possess the same violent passion for breeding through the sexes as is possessed by animals and that this drained the sources of life itself and would eventually make the plant impotent or lose the ability to fruit at all.

We propagate continuously from bearing plants, but they are restricted to the point where strength accumulates. For the purpose of securing the betterment of our stock plants as well as in the after multiplication, they are grown under the most favorable conditions known to the horticultural art. Absolutely no expense is spared which in our judgment would contribute to their betterment and yet under these favorable environments some will improve faster than others and so the scale of perfection is advanced materially by selection. We can improve strawberries faster than any other perennial because through runners we get new creations every year.

Notice the photograph. The plants have a lineage of nineteen years or since the introduction of the variety in which each generation came from an ideal, selected, restricted plant and are therefore not only perfect in

ATTENTION TO ROLL CALL.

Our field force answering to roll call. A thoroughly organized army. The foreman standing in front of his men, each wearing his badge, with the general assistants and superintendent on the right. They come to me year after year. They are required to become experts in the work they do or quit the farm. We have no bickerings, no strikes. Every man is well paid and prizes his job. We always have more applicants than places.

Our Staff of Foremen.

their organism, but free from all taint of seminal exhaustion.

These plants were set last April and the photograph was taken August 11th. The first year we can only judge of the general appearance of the vegetative parts which cannot be seen the following spring and so after they have made advancement enough to show these qualities, those showing best are designated by a numbered stake and scaled by actual measurements. Peculiarities of foliage, crowns, with number of apparent fruit buds are noted on a decimal scale of hundredths.

In the following spring we judge their fruiting abilities. Excessive pollenation is prevented by removing two-thirds of the blossom buds on each stem and the fruit is allowed to set and then thinned to two or three berries to the stem. The gland system of the plant can only be judged by its performance—the fruit it produces.

The size, color, texture, and form are all carefully noted. The question of superiority of the plant is not guessed at. It is a matter of mathematical calculation and the one showing the greatest number of points of excellence now becomes the parent of all of that variety. Its runner plants are transferred to a bed where it can be further developed and make runners from which all our customers are furnished. They are just as truly thoroughbred as any animal in the land. They are veritable engines in fruit production. All their "valves" are perfectly adjusted by an expert of twenty-one years' experience.

To make a brilliant success the purchaser need only to know how to put the fire (manure) under the boiler (plant) and turn on the steam (tillage) and their machinery will turn out "Big, Red Berries" in a manner that will astonish thine eyes.

SCIENTIFIC PLANT BREEDING.

Ten years ago the division of Vegetable Physiology and Pathology of the Agricultural Department at Washington was a small, crude affair. The Bureau of Plant Breeding had not been established. To-day it is the leading feature of the Agricultural Department and the Bureau of Plant Breeding is the most prominent feature of the division. It employs a respectable army of the world's best experts.

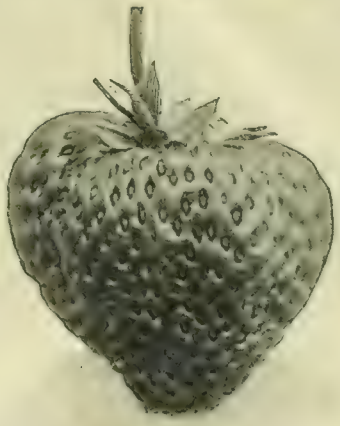
Ten years ago there was not an Agricultural College in the country having special classes in plant breeding. To-day every college makes scientific development of plants a dominant feature.

Ten years ago there was scarce a text book devoted to plant breeding. To-day there are a number of them, the best being "Plant Breeding," by Prof. L. H. Bailey, and published by MacMillan Co., 66 Fifth Avenue, New York city, and also other books by this eminent author on kindred subjects.

Ten years ago there was not a society of plant breeders led by scientific men in the world. To-day many of the states have organizations and are working astounding revolutions in corn, wheat, oats, potatoes and every other vegetable and fruit.

THE WILD STRAWBERRY

The berry we used to find in the meadow growing without the skill of man. The photographs of berries following show the development by culture, selection and restriction.



JOHNSON'S EARLY (B).

Before reading the description of varieties found under each photograph, please turn to page 53 and read the article on "Describing Varieties," also article on "Photographs of Berries," page 51. Price list of plants on pages 61 and 62.

Johnson's Early is an extra early berry. Will succeed on most any soil, but does better on sandy land rather than heavy clay. It is a great market berry of the South for shipping North and in some sections is almost exclusively grown for this purpose. Succeeds equally well at the North. Berries hold up well to last picking. Sixth year of development by selection and restriction.

Ten years ago meetings of every horticultural society spent their time harping on new varieties and which of the old (and often better) varieties they should discard. To-day they are looking for means to improve and make the old sorts more efficient.

Ten years ago the pedigree of an animal counted for everything. Individuality counted for little so long as the ancestry was pure blood. To-day individual perfection counts for everything and the pedigree must not only show pure blood, but individual perfection of ancestry.

Only one year ago had the subject of plant breeding gained sufficient prominence to justify the calling of an International Conference of the world's horticultural experts where they might meet face to face, eye to eye, and exchange experiences and thereby evolve a system by which we might eventually mould the form and efficiency of plants, just as the potter forms his plastic clay. It is even now being done. This conference was held in New York city under the auspices of the American Institute and New York Horticultural Society, under the patronage of the Agricultural Department at Washington. Eight countries of Europe and experts from the Division of Vegetable Physiology and Pathology and experiment stations were in attendance. The author of this book was invited to present the possible modifications of the strawberry which he did under the title of "Bud Variations." In the discussion following, the features of the lecture as substantially laid down in this book were most earnestly commended. Selection restriction and physical development of plants as here pointed out were declared to be the very foundation of all improvements in bud propagation.

Less than five years from to-day no fruit grower will set a plant not thoroughbred as proven by pedigree and he will depend on a recognized expert to develop its fruit organs and balance them with its supporting vegetative parts.

In very much less than ten years there will be no "granddaddy blind people." People are learning that the world moves and that every effect is due to a definite cause and recognize the fact that when a plant will not bear fruit when well fed and tilled, it is due to a disorganized system.

PLANT BREEDING VS. PROPAGATION.

One of my correspondents objected to my using the words, "Plant Breeding," and insisted that the word "Propagation" was the term which should always be used in plant multiplication. He wanted to know if I would consider a man a plant breeder who took pieces of apple roots and grafted them with scions merely to increase the trees. I replied that I certainly should not any more than I would call a cow boy on the western plains a "stock breeder." A cow boy does nothing but watch for wolves and thieves and prevent cattle from going astray and mixing with other cattle. That is all the average plant grower does. He just keeps out weeds and prevents the runners from mixing with other varieties.

A stock breeder is one who selects animals and recognizes their individuality, keeps a record of their ancestry and has them passed upon by expert judges at all the fairs and determines exactly which is the best individuals and pays fabulous prices for superior specimens. Notice the thousands of dollars paid for fancy animals at the fat stock shows of Chicago the past year.

A plant breeder is one who pursues exactly the same course. He is taking measures to make the plant's machinery more effective, to strengthen the fruit producing glands so that it will respond to good feed and care.

Breeding by buds requires just as much and even more skill than breeding by seeds and the term, "Plant Breeding," in both senses is now used in all the colleges.

INTELLIGENCE OF PLANTS.

God never made anything and gave it life withhout endowing it with sufficient intelligence to provide for its wants. I do not see how any one can see a group of beautiful flowers nodding their heads and basking in sunshine and say these beauties do not know of the others presence or that they do not know their human friends and protector. It

AUGUST LUTHER (B).

EXTRA EARLY. A host of friends made by it this year. Meets the requirements of a family berry on quality. Succeeds everywhere. It has bright but rather dark red flesh, firm enough for shipping, and like all the extra early varieties makes laterals freely and should be confined to hedge or narrow matted row. Fifth year of selection and restriction.

EXCELSIOR (B).

EARLY. A very vigorous grower. Requires a sandy loam soil. Berries quite tart, but rich; all the same size and holds up well throughout the season. Pedigree shows eight years of selection and restriction.

is just as natural for a lover of flowers to talk to them and call them pet names as it is to call our own children in endearing terms.

We do know that plants have preferences and even their love affairs just as birds of the air and all animals have. We know that many plants will not accept pollen from certain plants even of the same species while they readily take it from others.

Many plants catch insects and feed upon them and display much cunning in trapping them and some have means of locomotion and move from place to place. I notice the vine creeping up the side of my house exercises a good deal of skill in selecting the places for attaching itself to the wall.

They enjoy good living and manifest delight when environments are congenial and I have no doubbt if we had some means of communicating with them we should not find them dumb inanimate things we have always taken plants to be.

Does not a sick plant behave just as a sick animal? It wilts, looses its powers and life moves out. You judge the sick animal by its looks. How do you know it suffers pain? How do you know the plant does not suffer pain? Does it not furnish as much affirmative evidence as the animal?

Are you not willing to admit after you have studied its equally complex organism that it is governed by all the laws affecting intelligence that are found in any of us?

AN AGE OF EXPERTS.

We are living in an age of experts and specialists. Wireless telegraphy, the telephone, phonograph, duplex telegraph and astonishing automatic machinery that grace our factories are the result of division of labor and investigation and we are really just beginning to see the dawn of an age of inventions. Don't laugh at the men who say we shall yet see the air full of great ships carrying the commerce of the world. It is no more impossible than the great things already accomplished.

A specialist is one who takes a single thing, studies it in all its phases until he can detect the slightest fault and devise means and ways of making it contribute more largely to human happiness.

We have the carnation specialist who has taken these beautiful flowers and by selection and other means increased the size and brilliancy of foliage many times. The rose specialist has taken the old single leaf flower and doubled it and enlarged it until we have the magnificent flowers of to-day.

The list of wonders wrought by persons devoting their lives to investigating one thing, is a long one and we cannot spare space to enumerate them further. The world's motto now seems to be, "This one thing I do." I have chosen the strawberry as my specialty. I believe I can truly say that for the past twenty-one years I have never passed an hour, not devoted to sleep, in which my thoughts were not centered on this magnificent fruit and trying to devise some means of making it grow two big berries where we were once getting one little one and how these might be made more delicious and more pleasing to the eye and contribute more largely to the happiness of the home and family circle. Results of these investigations have been recorded in this and previous editions of "Great Crops of Strawberries and How to Grow Them," and now more than twelve hundred thousand copies have been scattered broadcast over the land and from the highest horticultural authority comes the assurance that the key note of success in berry growing has been sounded and bidding me a hearty God speed in this work of revolutionizing fruit growing.

I am now possessed of abundant capital and I am determined to solve the problem com-

MICHEL'S EARLY (B).

Long known as the earliest of all berries, but now gives place for others, but none more than two or three days ahead of it. Hedge or narrow row. Likes sandy loam best. Berries deep red, firm and good shipper. Pedigree thirteen years of selection and restriction.

PALMER (B).

EXTRA EARLY. I can now catalogue it with confidence. Berries deep crimson, mild, rich flavor for home table or market. Second year of selection and restriction.

pletely and build up an establishment second to none.

My two business partners share in this enthusiasm and recognize the fact that cash is only intended to contribute to human happiness and we shall use it lavishly wherever it will secure a betterment in our work. The strawberry and nothing else shall claim the rest of my life.

The story of the bag-stone serves to illustrate the point. The families of our Puritan fathers all kept a bag-stone. There were few roads in those days and the grain was carried to mill on horseback, being put in one end of the bag and a great stone in the other end to make it balance. Other things were carried in the same way. One day a boy approaching a mill was accosted by a gentleman who told him to get off and throw out that great use-

Throw that Bag-Stone away.

Putting Back the Bag-Stone.

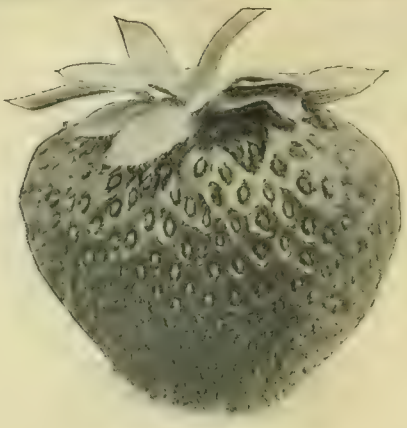
THE GRANDDADDY BLIND.

A person may be said to be granddaddy blind when he persists in following minutely in the steps of his father, grandfather and great-grandfather, and who cannot be induced to accept the marvelous discoveries growing out of modern specialism. Our ancestors knew nothing as to how plants lived, how they multiplied or why we can graft all sorts of fruit on different limbs of the same tree and get the same fruit as the tree from which the bud was taken.

less stone. The boy dismounted and the man helped him to take out the stone and divide the grain and put it back. The boy was delighted. He wondered why his father had not thought of that before. The horse walked better under the lighter load and he could get back home sooner. But he began to soliloquize. He regarded his father a smart man, his grandfather was a captain in the army and his great-grandfather one of the selectmen of the town and he felt they were smarter men than the man who had coaxed him to throw away

TEXAS (B).

EXTRA EARLY. Extra heavy fruiter. Stools up more readily than any other extra early variety. It originated in Texas, but succeeds equally well at the North. Berries deep red, high quality and a good shipper. I feel enthusiastic over its future. On good, heavy, rich soil it is the most productive of the extra early sorts and I highly commend it. Two years selection and restriction.



BEDERWOOD (B).

MEDIUM EARLY TO LATE. Very popular throughout the country and one of the heaviest fruiters of its season among the bi-sexual varieties. Berries crimson, moderately firm, high quality, a splendid pollenizer. Valuable for family and near market. I have it under record of seventeen year pedigree. Quite at home on any good land.

the family bag-stone. He began to doubt whether the miller could make good flour out of grain carried to mill without the regulation bag-stone and felt sure his father would trounce him for spoiling the grain in that way and so returned, replaced the stone and felt he had narrowly averted a disaster by accepting the advice of a crank.

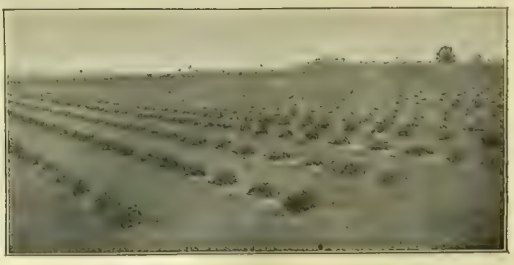
Just look around you and see how many useless appendages in the form of bag-stones are still being carried by the already overburdened man. Are you sure you are not granddaddy blind when you refuse to accept the aid of modern discoveries and divide the grain so you carry nothing but grain?

Look into your berry fields and see the barren plants or those having no machinery in their bodies to make berries and yet after the fashion of your fathers continue to throw coal (manure) under the boiler (plant) and force an engine (plant) with a broken valve to develop power (fruit).

Now, my friend, the moral of this story is that a respectable majority of people in your community are now and will remain granddaddy blind in the berry business and you can throw out the bag-stone, adopt the better methods, be a leader, and build up a business you will really enjoy and provide liberally for your family and old age.

THE PROPAGATING BED.

You cannot make a success in growing berries where you propagate plants in the same bed upon which you grow fruit. Each requires a different treatment to produce best results. It is much like the old combined reapers and mowers of fifty years ago. They were to cut both grass and grain and always wasted and bungled both. You must stop using alley plants because they are always immature and



their constant use will make the fruit so uneven in quantity that you lose five dollars where you gain one.

Preparation for a big crop of high priced berries must begin in advance. You must not only have your ground fitted, but your plants must have a development of fruit organs and so must be grown under special care. It makes a world wide difference if you start the bed with plants already well developed because in this case you have only to enable them to hold their own and then you can get results.

In selecting ground avoid all low, mucky soils. These unduly stimulate the vegetative parts of the plant at the expense of fruit organs. Such soil are largely used by growers of cheap plants because they make a world of runners, but it is hard on the man who buys the plants; for a plant grown under such conditions will go right on making runners instead of berries.

Select a sand loam and set plants fully twice as far apart as if they were intended for fruit. Make it only moderately rich and depend on thorough tillage and layering the plants so they will root as soon as formed and

CRESCENT (P).

EARLY. Probably the oldest berry in general cultivation. It has an unbroken record of nineteen years of selection and restriction and is one of the heaviest producers. In many localities it has been run out through bad propagation, but those sent out from here will show an increase over its old time vigor and when confined to hedge or narrow row its berries will be big enough for any one. Berries beautiful, fire red, good shipper and good seller.

LOVETT (B).

EARLY. Dark red to center, high quality, always good size and generally popular. Twelve year pedigree.

be especially sure to keep them spread out so every leaf will be fully exposed to the sunshine.

Use the cultivator liberally but do not crowd the plants. Use a sharp pointed hoe to work around among the plants to break up the crust, using great care not to disturb the plants beginning to send down roots.

A runner will not make roots unless they are brought in contact with moist earth and so in layering it is best to remove a little of the dry top earth and replace it over the crown, but the leaves must not be covered. A small stone is best because they hold capillary moisture. It is a good plan to have a pretty large propagating bed because in a dry season it will not make so many plants and you will have opportunities to sell a good many and after you have taken what you want you can let the balance fruit. Where beds are fruited two or three years before turning under, you should plan the propagating bed a year in advance and order fresh selections of thoroughbred plants and in that way a material saving can be effected.

It is of the utmost importance that the breeding bed be mulched as soon as it frezes in the fall. A plant left to freeze every cold night and thaw every bright sunny winter day might form new roots to take the place of those broken by the expanding and contraction of the ground, if the plant was left where it grew, but where it is transplanted many will be sure to fail. The mulching serves to keep the plants back so you can fit your ground and still have dormant plants.

You will need to have a larger bed for these pedigree plants because they do not send out runners early. They first throw up large crowns and make runners later and will not make half the runners as a rule that common plants would make under the same tillage.

We are often asked if plants will mix where several varieties are set in the same bed. You have only to guard against letting the runners mix. They "mix' just as a lot of white men and negroes would mix in a crowd. As individuals they would always retain the type of their variety, just as the white men would always remain white and the negroes black.

As to the number of plants each will make depends on the soil, moisture and care given and especially the amount of nitrogen in the soil. As a rule the early varieties make more runners than the late ones. . These will generally make 30 to 50 plants and late sorts, 25 to 40.

The propagating bed is a fine place to study plant life and get interested in it. You always feel better and acquire a disposition to push things along when you find you are doing work in a systematic way and see big results in advance. A scrub pig will make pork, but a well bred pig will make very much better pork and a good deal more of it according to the feed given it. Don't allow yourself to believe there is not the same difference in plants.

Selling plants is much like selling berries. When you grow berries that are so luscious and good they will contribute more happiness to the purchaser than any one else you are dead sure of that person's patronage.

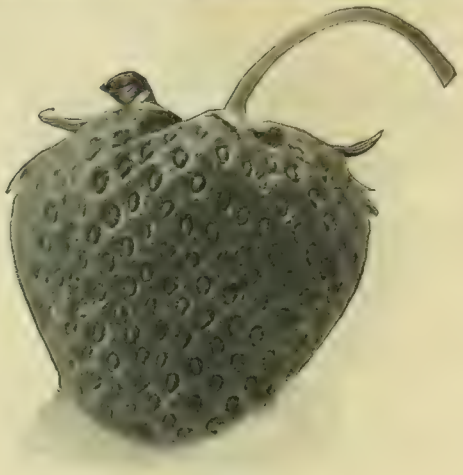
Plants are judged by the fruit they bear and when people see your big berries they judge rightly when they say big, luscious berries cannot be grown on poor plants and so you will soon begin to have inquiries, and if your propagating bed is conducted right you will gradually grow into a profitable business in this line.

The demand for high grade strawberries in these prosperous times is something enormous and growing every year so that the demand will always be greater than the supply.

Money is useful when it brings happiness and the fellow who can furnish the most pleasure for the least money will get the most orders for berries or plants or both.

CUMBERLAND (B).

EARLY TO LATE. It is that great big crimson berry so sweet that even an invalid can eat it. Many people who cannot eat a sour berry can eat of this to their fill. Splendid berry for company when you serve with stems. Not a very good shipper and will look dull, if left in sunshine for a considerable time after picking. Pedigree of nineteen years selection and restriction.



CLYE (B).

MEDIUM EARLY. There must be plenty of fuel under its boiler (manure rich in nitrogen) and then it will astonish you. No berry is more productive, but if land is not rich it is impossible for the plant to mature all its fruit. It will do its work, if a liberal supply of stable manure has been used, or about one hundred pounds of nitrate of soda to the acre is sown alongside the row in the spring so the rains will wash it into the soil. This stimulates leaf growth. Berries are crimson color, true as a top, great big fellows and just pile up around the plants. Ships well and always sells like hot cakes at a county fair. Tenth year of selection and restriction.

BIG PLANTS VS. LITTLE PLANTS.

Some people judge a plant purely by its size. You might as well judge a machine or a watch in the same way. The value lies in the perfection and strength of its internal organism.

When you cut a runner on one plant it will at once throw out another runner because of a weakness in its seed forming organs. Another plant of the same variety, but which has been kept under restriction and has a strong fruit organism, having the runner cut throws up a second crown and forms another fruit bud. Now, if you want fruit, the latter plant would be far more profitable.

On an average, these thoroughbred plants will run about twice as large as common plants because they are not crowded and are perfectly balanced in all their parts, but if any one ordered a number of varieties and expected them to be all the same size plants, he would be disappointed. The Warfield and Senator Dunlap as well as most of the extra early sorts cannot be made to make as large plants as Marshall, Haverland and other late sorts, because their habit of runner making is different.

A big plant is merely one in which the vegetable parts are developed. The best plant is one evenly balanced in its organism and fully matured so it will undergo the hardship of shipment and transplanting. "By their fruit ye shall know them."

LOCATION AND VARIETIES.

The leading topic in our correspondence is about adaptability of varieties to certain localities and soils. To all these inquirers I have to say that the strawberry is the most universal fruit in the world. Unlike the tree and bush fruits, hardiness is not a factor since all varities are hardy. The finest strawberries in the world are found in Alaska even near the Artic Circle and along the Hudson Bay and the same varieties flourish in Florida, Cuba and Mexico and even in South America, Europe and Asia. It is not fastidious but it does enjoy good food and generous tillage. It succeeds on all good garden soils where general farm vegetables will grow.

It is true that varieties, like all other plants, differ in their behavior on different soils and methods of culture. One variety makes long roots and penetrates the soil deeply and will therefore succeed on droughty land where another with short roots will require a heavy, naturally moist soil with an extra allowance of food. Some varieties do have a stronger constitution just as animals have and will therefore stand more hard usage. Some soils contain a certain element that one sort is especially fond of and this will flourish while another variety not caring for that particular substance would not do so well.

There are some sorts so constitutionally strong in their vegetative parts and so vigorous in their seed organs that they will do well under almost any circumstances and these are the fellows we are all looking for. We call them well tested and by that we mean they are have been grown all over the country on all kinds of soils and under every mode of tillage and yet they all show up with bounteous crops of delicious fruit.

They are the safe varieties to plant largely. It is my business to keep tab on all these things and ascertain the extent to which a variety has been tested and its record, of fail-

TENNESSEE PROLIFIC (B).

On of the largest early berries and "enormously productive." Very popular at the South for Northern trade. Succeeds on any soil a berry can be grown on. Should be restricted to hedge row. Splendid family berry, mild in flavor and rich. Roots deeply and stands drought well. Sixteen year Pedigree.

WOLVERTON (B).

EARLY. One of my pets. Berries always so big, so bright in color, delicious in flavor that the demand for it is greater every year. It is not fastidious about soils and is one that holds the fort on the market. Pedigree, fourteen years.

ures and successes. Every year great numbers of new seedlings with testimony of their wonderful performances are sent to me for trial but few stand the universal test.

Since commencing strawberry growing, twenty-one years ago I presume I have tested more than two thousand commended varieties and out of these have selected fifty-two Cosmopolitan (man of the world) sorts and feel confident a better list could not be made and yet it is true that one grower gets very great returns and is enthusiastic over a variety while another person gets different results and makes another one his leader.

Select the variety you hear the most generally commended and then select a few of several other sorts and try them side by side on your own soil and under your own method of tillage and you will soon have a favorite list which will guide you in the future.

SOILS.

Any good garden soil will do. I do not like the extremes of light sand and heavy clay but either clay or sand loam will do. Sometimes I receive boxes of soils by mail or express with the request that I analyze and tell definitely whether it needs this or that to give best results.

The Agricultural Colleges undertook to analyze soils and tell farmers what they needed to make them grow certain crops and made some comical blunders. They could tell the percentage of foods in them, but could not tell whether these things were available to a plant or not and so threw up the whole business.

The farmer or gardener is the best chemist and can tell better than any one else. Just answer these questions. Do corn, potatoes and garden truck do well? If so, then strawberries will flourish. If it has been run and lacks fertility then put on the manure. Tillage is manure; that is, it makes all the food in the soil available and so if the land is not rich give extra tillage.

Low land, that is land lower than the surrounding fields is liable to injury by spring frosts because the cold air runs down hill like water and will settle in low places and freeze while higher land will not be affected. Set the late blooming sorts on this and the extra early sorts on the highest land you have. I have had some varieties injured by frost but never failed to get a paying crop.

There is much good land where water will collect in the winter when snow is going off. This does not hurt the plants. I have seen them freeze up solid in a foot of water and stay so for a longltime without the slightest injury but a few hours under water during the growing season is fatal. Avoid cold spring soils where the ground is saturated much of the time in the spring.

MANURING THE GROUND.

I have told you that a strawbery plant is a machine or engine for manufacturing berries. Manure and tillage is like the coal under the boilers. No matter how good your engine (plants) are you must have steam (manure) to make it go and at the same time remember that no matter how much steam (manure and tillage) you have you cannot make things go if the engine (plants) are out of order.

There are four things only that we need to concern ourselves about in manure and these are humus or decayed vegetable matter to make the ground soft and mellow as well as spongy so it will hold moisture and permit a circulation of air through it to keep the food available. The other ingredients are nitrogen, potash and phosphoric acid. There are many other things plants eat but there are enough in the soil to last thousands of years and so we will only have to put back what we take out of these four things.

WARFIELD (P).

EARLY. It is the great market berry and grown generally in every state and territory on all kinds of soil except light sand. Its pedigree here shows seventeen years of continuous selection and restriction. While it makes many runners and plants themselves are smaller than most other varieties, yet visitors are surprised to see the mother plants in the propagating beds as big as half a bushel while runners have formed all about them. When runners are confined to hedge row it piles up the berries in an astonishing way. The berries are deep blood red to center, all near the same size, a good shipper. It is known as the great canning berry as well as for table at home. On account of its disposition to make laterals it should never be grown in full matted row.

LADY THOMPSON (B).

EARLY TO LATE. More largely planted at the South than any other berry. By an accident we were compelled to discontinue its propagation for three years, but now have it well developed and up to standard. It succeeds anywhere, but does especially well on sandy soils. Is a splendid shipper and an all around good berry. Bright red and first class in quality.

The best manure ever invented is the dung of animals. When the animal eats grain and vegetable matter it takes out enough to build its own body and returns the waste material to the manure in such shape that it furnishes all the elements the plants need.

On ordinary loamy soil which has been cropped for several years you can put on as much as you please up to forty loads to the acre but you must ever bear in mind that plants don't eat manure. In a coarse rank form it is even poison to them. All manures must be turned into actual dirt before the plants can appropriate its elements.

The ideal way is to put it on liberally a year in advance and then sow leguminous plants like cow peas, broadcast at the rate of two bushels to the acre. Sow in June and plow under in September and then sow quickly to rye, say three bushels to the acre. The rye will appropriate the nitrogen and other soluble parts to prevent it from being washed away and the rye leaves will shade the ground and prevent the rain drops and running water from puddling the surface of the ground during the winter. I always keep something growing on the ground all the time on this account. Mere shading the ground makes it rich. We cannot always wait a year to manure ground and so if we put the manure on during the fall and winter, spreading it evenly as we draw it out, the rains and snow will wash it out into the soil. Rotted manure is much the best but this cannot always be found so I use fresh manure in this way but never plow under large quantities of coarse straw as it will seperate the soil at the bottom of the furrow and prevent moisture from drawing up by capillarity from the sub-soil so the ground will quickly dry out. Rake up the coarse straw before plowing and pile it up for a winter mulch.

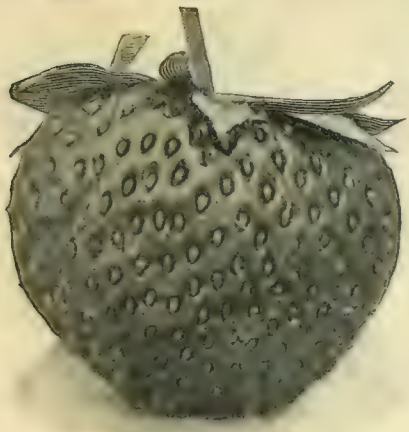
Plow it under and then cultivate it deep both ways to mix it all through the soil when it will rot very fast. It should be evenly distributed through the ground. The more you harrow and stir the ground before setting the plants the better because exposing the soil to the air makes its foods soluble and available to the plant.

. . MANURING IN THE HILL. . .

It might be wicked to choke the person to death who taught people to pile manure around the plant or put a great quantity of raw material under it but I wish people had never caught that idea for it always does serious injury. If you feel the need of adding fertility, put it a little distance from the plant and cultivate it in. The plant will find it as it sends its roots out several feet on each side of the row. If you could wash the soil away from a plant with hose so as not to break the tender feeders, you would be surprised to see how long they grow.

COMMERCIAL FERTILIZERS.

These are now subject to Governmental inspection and may be relied upon and are therefore being more largely used every year. There are many grades of them and like strawberry plants, the higher grades are always the cheapest. A ton which costs twelve dollars is not as cheap as one costing forty dollars.



RIDGWAY (B).

EARLY. A variety of sterling merit and not fastidious about soil. Great, big, bright fellows, red, rich aromatic flavor. Serve the beauties with stems or any other way. Firm enough to ship long distances and good enough for a king. Pedigree since introduction, eight years ago.

GLENN MARY (B).

MEDIUM TO LATE. There are not many growers who have not seen and tested Glenn Mary and, if they were not delighted with it, it was because they were monkeying with exhausted strains of plants. They are big, bright red, rich, meaty, creamy berries. Lives anywhere you plant it. Seven year pedigree and another of my pets.

The "cheap" fertilizer is mostly "filler" or dirt or some other substance used to make weight to which is added the nitrogen, phosphoric acid and potash and the amount of these three things govern the value. The cheap fertilizer contains very little of these elements and you have to pay freight on and distribute two or three tons of dirt to get as much food as one ton of the high grade.

Commercial fertilizers should be used in connection with stable manures of leguminous plants turned under in order to get humus. If there is plenty of humus in the soil you may rely on them altogether. The manufacturers have given careful study as to the needs of particular plants and furnished special formulas for different crops and all towns have their agents so you can get these pamphlets free.

It should analyze for strawberries from three to four per cent. nitrogen, ten to twelve of pure potash and twelve to fourteen available phosphoric acid.

It pays to use manure very liberally. There are three things you can sefely borrow money to purchase and these are, Thorough Pedigree plants containing the machinery for making big, red berries; and plenty of power to run them in the shape of manures, good land and I might add, a good church pew for yourself and family. The returns of all these are bountiful and prompt. Use them even excessively liberal for the dividends will be ample.

WHY WE PLOW.

Plants take all their soil foods dissolved in water. Now if all the foods were kept soluble all the time the heavy rains would wash them away and soon there would be nothing left for plants to feed upon. Now the all wise Creator provided that they should revert to a form not soluble in water so they could not wash away and at the same time He provided an agency to gradually change them back to a soluble form and that agency is the oxygen of the air.

When the ground lays through the winter the rains pack it down hard and so the air cannot get in and the foods for plants quickly change to an insoluble form. We now take a plow and break it up, turn it over and then we take the harrrow and stir and roll it to mash the lumps and make it as fine as possible so the air will come in contact with every soil grain and then we say we have a good seed bed. We mean that the food in the soil has been made available so the plants can grow.

When we merely turn the ground over with the plow we do not bring much of it in contact with the air and so but little of the food is made available so the plants can take it up and the growth would be slow. We always roll and harrow our ground about one dozen times before we set the plants and then you ought to see them jump when sunshine comes to them.

WHY WE SUBSOIL.

Subsoiling is to follow the common plow with one which only breaks up and pulverizes the lower stratum and leaves it at the botom of the furrow. This subsoil must not be brought to the surface, as it contains but little plant food. By breaking it up we actually create a reservoir of water under the plants which draws up by capillary action to tide them over the droughty season. The soil grains being separated, they will surround themselves with a thicker film of water. As an illustration, put some small gravel stones on a wet cloth and see the water pass up and quickly cover them and remain so long as the cloth is wet.

Sometimes when the ground has been plowed the same depth for a number of years the bottom of the furrow becomes glazed and baked so hard the water cannot settle through it or come up from below by capillary action; and

SENATOR DUNLAP (B).

MEDIUM TO LATE. I wish I could impress you with the true value of this variety. It is my pet of pets. You cannot make the mistake of setting it too largely. It is such a vigorous grower that it is at home on all soils. We have continuously propagated it on our Pedigree Plan for six years and while it is a prodigious runner maker so its plant is not as large as others, yet it shows its breeding by building up the biggest crowns, even in propagating bed where runners are to be fed as well as fruit crowns. When runners are cut as for hedge or narrow row, the berries just pile up and they are so beautiful and delicious. Fire red to the center, shiny surface and beautiful yellow seeds. Look at the photograph. That only half tells it.

KANSAS (P).

MEDIUM. I received this berry for trial seven years ago and put it in the trial bed with about 250 other varieties and it outranked them all. It was a hot, dry season giving it a chance to prove its droughty qualities. It always gets there with berries of high quality, big, red fellows and is a safe variety to make a leader. Has been tested everywhere. Pedigree, since introduction, seven years.

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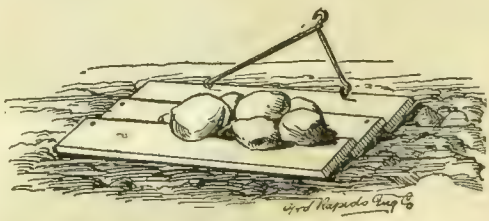
when heavy rains come the plants are drowned out, and during a drouth can get no water from the subsoil, all of which is remedied by subsoiling.

Some soils are injured by subsoiling, as a waxy clay or gumbo soil, which, when very wet, will run together in a solid mass. Earth worms tunnel such soils and keep them porous, and it is better not to distrub them. A loose gravel or light sand is already as loose as it should be to secure capillary action and will be injured by making it looser.

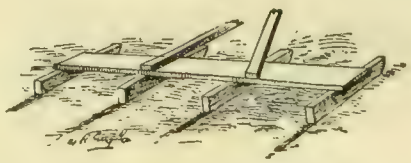
A composition of sand, gravel and clay or what is called "hard-pan" or any soil so dense you cannot dig it up with the hands, would be very greatly benefitted by breaking it up. I urge subsoiling wherever the conditions will permit it. It should always be done very early in the spring so the rains will fill the "reservoir" before the drought sets in.

The Roller.—You cannot properly fit land without a roller or floater. The plow and harrow leave the ground too loose and do not sufficiently exclude free air and capillary action will not bring the water up from below. The particles of earth must be brought near together. If you do not have a roller, take three two-inch planks about seven feet long and one foot wide; bolt or spike the edges to-



The Floater.

gether like the siding on a house, and hitch a chain to each end, and load it with as much stone as a team can draw and go over the surface. On many soils it will do better work than a roller. **Do not attempt to set plants in loose earth.**



Marking off the ground.—Have your ground properly firmed, leveled and rolled so you can set the plant exactly the right depth, or if you use the dibble or spade, you can determine quickly the right depth for setting plants. Mark as light as possible where the rows are to be. For this purpose we take a board about one-half inch thick, eight or ten inches wide

SCIENTIFIC SETTING OF PLANTS.

Here we have a photograph of our plant setting brigade. In the spring of 1893 seventy acres were set with scarcely a plant lost. Every man is drilled so each makes exactly the same motions—no time lost in false motions.

and long enough to mark four rows at a time. Make four short sled runners and nail them under the board the distance the rows are to be apart, and nail shafts or handles on the top to draw it with. A man can draw it all day without fatigue. The object of using a thin board is to make it bend and accommodate itself to the uneven surface of the ground. Get the first row perfectly straight and let one runner go in the last mark as a guide. This will make all the rows exactly so far apart, so that late in the season when your plants get larger, you can adjust your cultivator so as to do thorough work by going once in a row.

The best marker is made with wheels as seen in the photograph of plant setting. Notice the end of the marker is raised with a stick to show how the wheel frame is hinged so it drops down in low places and continues the mark unbroken.

I have tall stakes made and painted red and white to guide the men in marking. The rows of all blocks are joined exactly and also at road crossings on the farm so the rows show entirely straight across the farm, in many places over a hundred rods. It looks beautiful to people passing along the highway to see these long rows straight as an arrow and no plant an inch out of line, besides the long straight rows enables us to do rapid and accurate work in spraying and cultivating.

SUNSHINE.

I have already explained that sunshine is the mechanical force that enables plants to assimilate their food and separate the carbon from the oxygen of the air; that to do their work the air must have free circulation among the leaves and particularly at the crown of the plant where the seed germ is located or it cannot develop; for this reason the plants should always be kept far enough apart so the leaves can fall over flat, so the entire upper surface shall be fully exposed to the sun's rays. Where plants are allowed to make runners and mat so thickly that the sun can only shine on the outer edge, you must not expect much fruit.

Did you ever wonder why God made the sun to arise far to the northeast and set in the northwest? This was to cause sunshine to reach the north side of trees and plants. Notice how the house plants turn the upper surface of their leaves toward the light.

Fungus plants, like toad stools, mushrooms, etc., grow in the dark, but they have no digestive organs of their own and merely appropriate dead matter in mould.

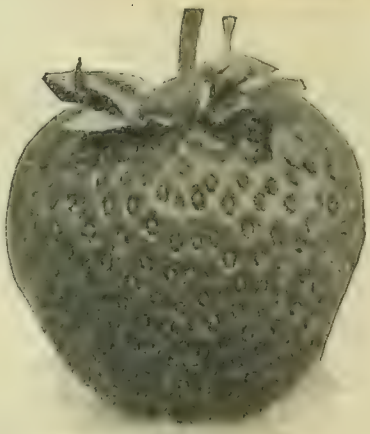
ARRANGEMENT OF PLANTS.

There are four ways of growing strawberries, viz,: Hill culture, hedge row, narrow matted row and full matted row.

Hill or stool culture does not mean growing them on a little mound of earth as many of my correspondents seem to think, but on level ground. It means that the runners are all picked off as fast as they appear so it will be confined to one single plant. It might be called a consolidated plant. If the fruit organs and disposition of the plant to make fruit buds is strong, as in the case of a thoroughbred plant, when a runner is cut, it will not throw out any more runners until it builds up on the side of the plant a new crown and fruit bud.

PARSON'S BEAUTY (B).

MEDIUM EARLY TO LATE. If this variety had been introduced with a boom, it would now have been a leader on every farm. I scarcely know how to impress you with its true value and still do other varieties justice. The berries are big, deep red fellows, beautiful and delicious, and when productiveness is mentioned we hardly dare telll how the beauties pile up, but put it on your order and you will not regret it. It is a good shipper and it sells at sight.



SPLENDID (B).

EARLY TO LATE. For several years we could not impress people with the true value of Splendid. The name is a puff and tells the truth, but somehow people did not order it and so we dropped it out of our list; but I knew its true value would be recognized and so kept on building it up by selection and restriction. It has come at last. There has been an urgent call for it and so this year we are prepared to meet it. Berries are up to the photograph, meaty and rich and the past three years has been one of the most productive varieties on the farm. It is a beautiful berry and one of my pets.

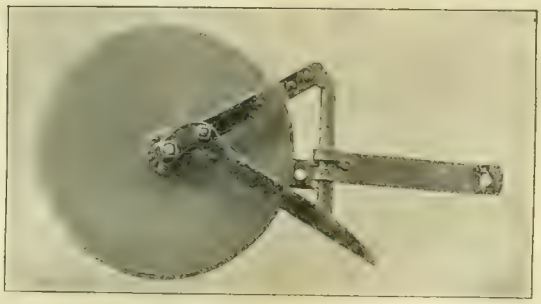
Then it will send out another runner. Cut this and you will get a new fruit crown. It is a fine test of the fruiting vigor of a plant. If it is exhausted in its organism, when you cut a runner, it will throw out another runner and often you will find it exceedingly difficult to make it build up fruit crowns. Of course, all plants will make runners more freely, if the soil contains a large amount of nitrogen.

The soil must be very rich and the plants set in rows 24 to 30 inches apart and about 20 inches apart in the row. It is a waste of land to set them three or four feet apart because the ground would not be fully occupied.

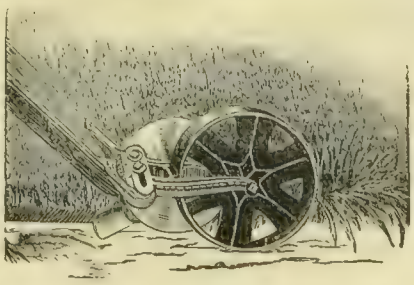
The advantage is that the plants will arrange their foliage so each leaf shall have full sunshine and a free circulation of air all around it. Sometimes the plants stool up too much to permit this and then as good results do not follow. The fruit buds are generally fully matured in the fall. This is of the utmost importance in growing high grade fruit and here they have plenty of time. It makes it easy to hoe and conserve moisture and the saving over working in the matted row is more than the cutting of runners.

THE HEDGE.

The hedge row is most decidedly my ideal way of growing berries. For hand tillage rows need not be over two feet apart, but for horse culture at least 30 inches and plants set about 30 inches apart. Let one runner start out each way and form two plants each side. This makes the plants set about eight inches apart. Then we keep off all other runners and keep the plants, like drilled corn, in a straight row. The runners can nearly all be cut with a sharp hoe or rolling runner cutter like the enclosed picture. It is a flat disc ten inches in



Rolling Runner Cutter and Leaf Guard. Price $1.75



Runner Cutter attached to Wheel Hoe.

diameter attached to the cultivator by an outrigger with castor action and has a leaf guard which picks the leaves up and pushes them aside and cuts the runners by rolling over them. It fits the 12-tooth Planet Jr. cultivator, but will work on any by having holes

THE HEDGE ROW.

This is a photograph of one side of a section of hedge row of our pedigree plants in fruit, showhow the berries literally pile up. Rich ground, Thoroughbred Plants and good tillage breed "Big, Red Berries" and big, red berries breed enthusiasm, and enthusiasm breeds cash and cash makes the mare go.

drilled to bolt the outrigger on. I prefer to bolt it to a wheel hoe frame because I can control it much better and make it dodge in and out to get the runners. I use it this way altogether. Use a file to keep the disc sharp. There seems to be an instinct in plants to send the runner out in an open space where they will get air and sunshine and so you will see a very large majority go across the alley so the cutter will get nearly all of them and the balance can be cut out with a hoe while you are weed fishing.

The cultivator can be made to cover almost the entire surface making hand work about as small as possible. The dust mulch can be kept on the surface so all the water is breathed away by the plants. The plants will not get too large so as to crowd into the center. The leaves form an oval ridge giving perfect exposure to sunshine, while the alley between the rows gives ample root pasturage.

The berries will all be large and even in size so they look very beautiful in the box. There are so few small ones that it does not pay to sort them. The pickers can make more money picking at a cent a quart than two cents in wide matted rows where they have to spend much time in hunting through a mass of foliage. The berries just lie in wind-rows along each side and about all a picker has to do is to examine their ripeness.

The narrow matted row is the next best. The row is allowed to fill in so when full it will not be over a foot wide. Plants must not be allowed to set so thickly as to exclude sunshine from the crown. Then all the runners are cut for the rest of the season. The rows should be three feet apart and plants about 30 inches in the row. A sharp pointed hoe is best for working around among the plants.

THE WIDE MATTED ROW.

The rows are made four feet apart and plants about 24 inches apart. As the runners form the cultivator is narrowed up, always going in the same direction so as to throw them around to fill in the row and generally leaving it about 30 inches wide with an alley about 18 inches wide. This system has been handed down to us by our granddaddys and is still in quite general use. It is perhaps best on very poor land or where you have reason to believe there are white grubs.

My objection to it is that the plants are liable to form too thick and it is a serious task to thin them out because it injures the plants which are to remain. The crowded leaves turn their edges up so they do not have full exposure to sunshine. There are too many small berries and for want of air and sunshine they do not have quality. A small berry has as many seeds as a large one and since it is the pollen and seeds that sap the vitality of the plant, one big crop uses them up so the second and third crop cannot amount to much. Of course, the berries are very uneven in size and do not look well in the box. The pickers injure the leaves more or less in pawing them over in hunting for the berries and as a rule the last berries will be too small to pick.

In nearly every case where the plants are quite thick, fully a half or a third of the berries will be left as too small to put in the box, and these continue to take the resources of the plant. I quit the full mated row business 20 years ago.

SETTING PLANTS.

The plants sent from this establishment are not only scientifically grown but scientifically

NEW YORK (B).

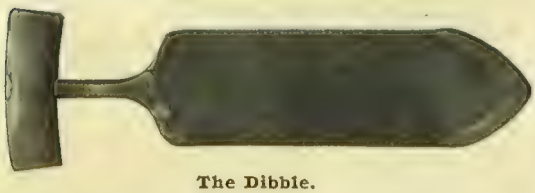
MEDIUM TO LATE. A fancy berry to fancy trade. Requires strong, rich land and then it is simply grand. It is a premium taker and will sell at highest figure. Berries all big, bright red fellows, especially fine for serving with stems. Pedigree, four years.

WILLIAM BELT (B).

MEDIUM TO LATE. A great big fellow and as rich and beautiful as a berry grows and exceedingly productive. If you will take the trouble to spray it, you will be delighted. Its foliage does not rust except with frequent rains and scalding sunshine. In many localities it is the leading berry. Hedge or very narrow row for best results. Eight year pedigree.

dug and packed in pure sphagnum moss and are sent to every part of the continent and, if not unduly exposed in setting them, you should not lose one plant per thousand. We assume you have opened the package and heeled them in as near as possible where they are to be set and that the ground has been marked off according to the plan you adopt for growing them.

The whole thing lies in getting the roots into the ground straight and separated so the fine, moist soil can be firmly pressed around each one with the crown or body of the plant as much above ground as possible while all the roots are under the soil. The general tendency is to set the plants too deep. The crown must not be covered as this would retard the starting of new leaves. It makes but little difference what tools you use so long as this is accomplished. For several years I have been furnishing a cone maker. It is the ideal way to set large plants, but requires the ground to be fitted exactly right and some skill in operating it. We have found it did not prove popular with many and so have discontinued its manufacture.



The Dibble.

One of the best things is a dibble which any blacksmith can make. Take a flat piece of steel three and one-half inches wide, one-eighth of an inch thick and ten inches long. Make it pointed and attach a handle as seen in the engraving. Plunge it into the soil with the right hand, press over so as to make the opening, slip the plant in, jerking it a little so the roots will straighten out and withdraw the dibble and press it down two inches from the opening and force the soil back hard against the plant.

When the row is finished go back and step on each side of the plant. The spade is quite generally used and is all right, if properly handled. Plunge it in, press over, then bring it back so as to move the lower end of the blade about two inches, force down an inch and then from you until the dry earth, if any, goes to the bottom; pass along rapidly.

The man with the basket of plants by his side following grasps the plant by the crown with the left hand and deftly flirts it so as to straighten the roots, drag it into the opening and with the right hand separates the roots so they are fan shape, quickly makes a mound of earth on right side and passes along. When the row is finished he rests himself by going back and stepping on the mound of earth left at the side of the plants which sinks into the hole made by the spade and leaves the ground level.

Especially note the all importance of tramping the ground around the plants very hard, if the ground is very dry so the water will draw up from the subsoil by capillarity. More plants are lost in a dry time by setting in loose earth than any other cause. If the earth is quite wet it packs easy and so you should step lightly. We use pans about fifteen inches long and five inches deep with a long handle riveted in the center for carrying plants. The plants are covered by a cloth so they are never exposed. Formerly we had a man drop, but we find men will persist in dropping several plants ahead, leaving them exposed to hot sun and wind so roots dry out. This is very bad and liable to injure roots so they will not start off vigorous-

MONITOR (B).

MEDIUM TO LATE. Introduced from Missouri five years ago. Tried and tested at all experiment stations. The demand was so great last spring our stock fell short, but we have a large increase for this year. Berries are all large and of uniform type, deep red to the core and as productive as any perfect flower. Five year pedigree.

SUTHERLAND (B).

MEDIUM TO LATE. Large delicious berries and plenty of them. Not fastidious about anything, but pitches in and grows. While its pedigree here is only two selections, yet it stools up promptly and shows high qualities.

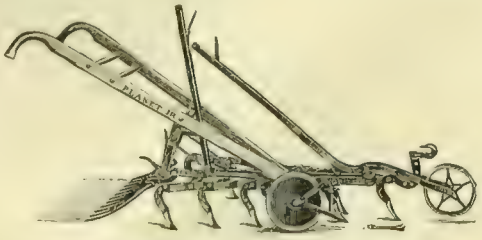
ly. If the day is dry and hot, we put a little water in the pan, but do not soak the roots too long. If the ground is fairly moist and the day is cloudy, we do not wet roots at all.

Few plants will stand more hardship than the strawberry and live and yet you cannot afford to take chances on exposing them more than is necessary.

WATERING PLANTS.

During a dry time people sometimes kill their plants by the manner in which they water them. If the surface is kept loose, plants may not grow as fast during the latter part of a month's drought, but they will not die. The moisture is in the subsoil and if the surface is loose it cannot get away. Now, pour water on so as to saturate three or four inches and you have packed the surface so capillary passages are established with the subsoil water and the whole comes up very fast and dries off so that at the end of about thirty hours it will be dry as a bone below the roots and, of course, the plant must die, for no plant can live, if the ground does not contain two per cent. of water.

The right way is to dig holes with a bar of iron or a trowel some distance from the plants, fill these with water several times and let it soak away so as to put the water into the subsoil. It will then percolate out under the plants and rise by capillarity so the roots will get it. After the water has soaked away hoe the surface fine and then water will not escape until the plants have time to drink it up. Put on a whole big lot at a time and don't add any more for at least a week. Be especially careful never to stir the surface when it is muddy. Never sprinkle strawberries with water from city water works when the sun shines. It will scald the foliage or cause it to rust. If you must sprinkle, put on heavy at night, wet it down to the bottom of the roots and then wait a week or so. Never sprinkle when in bloom. The large drops pelt the pistils and interfere seriously with pollenation.



Twelve Tooth Planet, Jr., and Runner Cutter.

CULTIVATING.

The cultivator is the poker to the strawberry engine. In running the engine you have to keep the coal stirred up so the air can get in to make the fire and it is just the same with the plant. Some people use the culivator only to kill weeds and while it is an excellent tool for that purpose, yet weed killing is a secondary affair. No weed can live where tillage to meet other requirements is given.

Plants cannot take any food until it is dissolved in the soil water. Now, if all plant foods were at once dissolved in the water, they would wash out and nothing could grow and so the Creator provided that as soon as these things were put in the ground they should chemically change to a form not soluble in water. At the same time a resolvent was given to make them change back to a soluble form as fast as the plants can take it

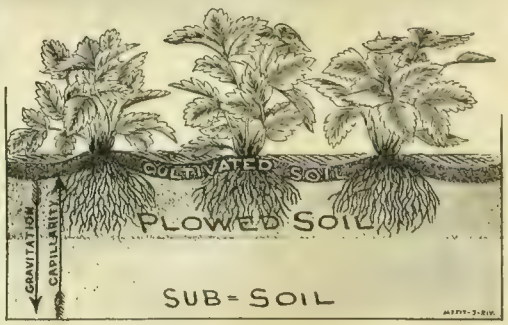
MILLER (B.)

MEDIUM TO LATE. The third year of selection and restriction shows this to be a most vigorous and reliable variety. It has attracted much attention both by the large number of big berries of high quality and vigor of foliage that it will succeed on all soils.

KLONDIKE (B).

MEDIUM EARLY. We classed it as extra early last season, but think it should be hitched along just a little. Since fruiting time there has been a big call for it which confirms my own opinion that it will prove popular. Second year of selection.

Send for 24-page Illustrated Catalog of Cultivators—Free.



Movement of Water in the Soil.

up so there will be no waste. This resolvent is the oxygen of the air. Countless millions of microscopic insects on which plants depend for preparing their food are in the ground. Our own bodies are the same way. Every corpuscle of blood contains a living insect and our flesh is full of them. Don't get frightened about it, for neither we nor the plants could live if they were not there. These insects must have oxygen and so passages are provided by which the air can pass freely through the ground.

When it rains, the drops of water beat the surface into a thin, slimy mortar and when it dries down into a crust the air cannot get through and then the food elements begin changing to a form not soluble and the insects get sleepy and the plants slow down in their work of body building and so we break up the crust with the cultivator, the air rushes in, the bacteria wake up and goes to business and the plants begin to grow very fast.

Then again we must keep the water in the soil. Now, cultivating does not put a drop of water into the ground, but it does keep that already there from getting away. When the rain comes it runs down the little openings between the soil grains. Gravitation keeps pulling it down until every grain is surrounded with a thin film of water. Just drop some small gravel stones on a cloth saturated with water and see it quickly draw up by molecular attraction and wet the little stone all over. This is what we call moist soil. When it is saturated the air passages are full of water and the plants cannot grow, but never mind, if the subsoil is porous it will soon be relieved of this surplus by going down deeper.

Now begins the upward flow of water. These air passages are very small so that only a very thin film of water can surround each grain and this makes molecular or capillary attraction very strong and so the water moves up quite rapidly to the surface. It climbs up just like the oil in a lamp wick. It is not the fire that lifts the oil, but capillary passages in the wick. You notice if the wick is too loose,

HAVERLAND (P).

MEDIUM. The standard of productiveness. In the hedge row the berries just pile up on each side and you sit and pick and pick. Oh, dear, when will you get them all. Color crimson, not very firm, but skin is tough and flesh sweet. Eat 'em with stems on. Fruit stems are long and slender so it cannot hold its great tresses of berries from the ground and so it must always be mulched. Fourteen year pedigree.

ENORMOUS (P).

MEDIUM TO LATE. Enormous means big, but that is not its only good quality. It is one of the heavy producers. Berries are always large and plenty of them, sound and meaty to the core. At home on all soils. Pedigree nine years.

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the oil will not come up. The fire does burn the oil at the top and this keeps the oil moving up steadily. Water comes up in the soil in the same way. The crust on the surface absorbs the water and lets it come in contact with the hot sun and air so it is vaporized and carried away.

Now the cultivator stops the water from coming up. How does it do it? It makes the soil grains so loose, so far apart that it takes so much water to fill the interstices that gravitation, the pulling down force is the strongest, and so as quick as the water strikes the loose earth it can go no further. Did you ever notice that in the dryest time you can go out in the road where the wagon wheels run and poke the dust away and find moist earth? The firm, hard earth brings the water up to this capillary force and the dust protects it from the sun and wind just as the cultivator leaves it. Of course, there is some evaporation, but if you will plow early and begin cultivating early and repeat it after every rain and at least once a week you need not fear the consequences of a protracted drought. After the ground once gets very dry, cultivating does very little good so far as moisture is concerned. You must never cultivate deep enough to tear the roots. They will come as near the surface as they can and, if you cultivate two inches deep and then later go three inches deep, you would destroy the best feeding roots. We go not over an inch deep next to the plant and at least three inches deep in the center of the row.

When soil grains are wet they are quite slippery and will move around and be forced down tight or packed in the course of a week so as to make capillary attraction strong and so we need to cultivate every week whether it rains or not.

When we irrigate, if we did not break up the surface of the ditch as soon as it dried off at the surface, we should lose every drop of water in a few days, but by destroying the capillary passages with the cultivator it will keep the plants growing nicely over two weeks in the hotest weather.

The best cultivator is one that will leave the ground very fine and loose. The most satisfactory thing I have ever seen is the Planet Jr. 12-tooth cultivator with the pulverizer attachment at the rear. We use it altogether and can furnish it to our customers at manufacturer's prices. It sometimes happens that land is exposed to a long sweep of wind and when heavy winds prevail it will raise the dust and often throw sand against the plants so as to seriously injure them. This is prevented by large cultivator teeth throwing the ground up in ridges. This breaks the friction on the smooth surface so the sand cannot rise.

FALL SETTING OF PLANTS.

The time to set plants is in the spring. We will not furnish plants for summer or fall setting under any circumstances nor for any price. We do not want to send these thoroughbred plants to any one to be grown under unfavorable conditions. We insist that they shall be set at the proper time, and that is early in the spring, on ground properly fitted and given suitable tillage and wherever this is done they create a sensation with every one who sees the fruit and this is the basis of our success in plant breeding and explains why the number of orders double every year.

The value of Thoroughbred Pedigree plants

DOWNING'S BRIDE (B).

MEDIUM TO LATE. We are greatly pleased with its behavior this year. It attracted general attention and visitors placed liberal orders so as to be sure of getting it. The berries piled up and were so rich we felt the necessity of preparing for a big demand. Pedigree, two selections.

UP-TO-DATE (B).

MEDIUM TO LATE. Of the old Sharpless type both in form and flavor, but more hardy in blossom and reliable. All soils. Berries are dep red, moderately firm, especially valuable as a family berry. Pedigree, eight years.

lies in the potency of their pollen and receiving fluids and their freedom from seminal exhaustion as well as full development of their fruit organs and they must have a fair chance to show these qualities.

If I knew you were a lazy, shiftless fellow and would not take pride in having something nice and be above the ordinary and would put the plants in poor ground and give poor tillage, your order would be a damage to me and I would not accept it.

Plants have no time to grow and develop their fruit organs and supporting vegetative parts when set in the hot, dry months of August and September, and besides all this we could not then furnish them at a price I would advise you to pay. Let them have a whole summer and pick the blossoms the first spring so as to preserve the vigor at a time when they have not secured a rootage to support this exhaustive process; follow the cultural methods prescribed and you will find fun, money and pleasure in the business.

POTTED PLANTS.

Did anybody ever get a large crop of berries on potted plants set in July and August? I did not inquire if you could get a few nice berries, I asked if you got enough to pay the high price of plants and the heavy express charges to say nothing of extra work in handling them. Such plants are generally pot bound and do not always make a vigorous growth. Possibly some persons have received satisfactory returns, but where one succeeds a dozen fail.

We are growing plants to sell, but we want to sell them to be grown under favorable conditions and not otherwise. We get our enormuos trade by sending out the best possible plants that can be produced and when purchasers succeed in getting big returns our patronage is increased and the loss of a few orders to be grown under adverse circumstances is a blessing to us and the parties whose money and orders are refused, and for these reasons we do not pot plants in July and August.

IRRIGATION.

In breeding and developing plants on a large scale irrigation is an absolute necessity, because the requirements to be met are very different from ordinary fruit growing. It is my mission on earth not merely to multiply plants, but to develop in them a strong fruit organism and support it with suitable vegetative parts so when it is sent to the fruit grower he can do the heavy work.

Now, to accomplish this, the plants must be allowed to spread out over the ground so each one shall have plenty of room for root pasturage and sunshine and so they must not be disturbed by the cultivator. I have already explained how the fruit grower can do this under the head of "Propagating Bed." Here, to bring out the best features of the plant it must be grown under the most perfect conditions.

Notice there is no flooding at all, but a long narrow tooth is used as a furrower which breaks the ground as deeply as it is plowed, some two feet on each side of the row of plants. The water is turned into these ditches as seen in the photograph and all the saturation is in the subsoil so it is impossible to injure a plant by excessive amount of moisture for it keeps settling down until suspended by molecular adhesion and then gradually returns to the surface by capillary attraction making the feeding ground just moist enough to cause the plants to grow naturally and bring out their best qualities.

Observe that a strawberry runner will not send down its roots unless the ground is moist. If the surface is dry, several plants will form on a single runner and thresh around in the wind and not root till the fall rains come and this is often too late for them to become woody and endure shipment and transplanting. One of the reasons our plants all live is that the roots are mature as they root as quick as the node forms. Then again, if a plant does send down one or two roots no

PHOTOGRAPH OF OUR IRRIGATING PLANT.

My work is the developing of plants for the home garden, the propagating bed and fruiting fields of fruit growers, and to bring them to the highest point of perfection they must have ideal soil conditions including moisture. The water is run into the ditches between the rows where it soaks down deep, then percolates out under the plants and rises by capilarity so plants grow naturally without unduly stimulating vegatative parts and gives them abundance of roots and crowns.

other roots will start from the crown, and here you would have a few exceedingly long roots, but like a cow's tail, the branch roots (hairs) are away down at the bottom where you don't want them.

By our system large numbers start direct from the crown and the lateral roots start high up and there are many of them. All these laterals callus during the winter and when transplanted in the spring quickly sends out feeding roots so the plant rushes into a vigorous growth and maintains it all summer. In short, a nurseryman cannot furnish a perfect plant without irrigation, because nearly every summer we have a dry time in the fall and this is the critical time in rooting plants.

This year we enlarged the pipes and hose of our irrigating plant and made such other changes as would give us about six hundred and fifty thousand gallons of water per day which enables us to properly irrigate our entire 70 acres of propagating beds.

A 25 h. p. engine and No. 6 Centrifugal pump lifts the water 30 feet from the mill pond and sends it through a 13-inch hose made of No. 4 sail duck canvas to the distributing hose where small hose are attached to openings in the main hose for letting it out in the ditches as seen in the photograph.

Two men regulate the flow of water and put about three thousand barrels into the subsoil at each watering which lasts about ten days. No mater if heavy rains intervene, all the water goes down deeper until saturation at the surface is relieved, the subsoil being porous, and then returns to the surface as it dries off and thus we keep a reservoir under the plants so their development is never checked and our customers always get perfect plants.

HORSE LEG IRRIGATION.

Horse leg irrigation consists in holding the water from the snows of winter and spring rains in the ground for the use of the plants during the dry weather of summer.

For the average fruit grower it can be done far cheaper and better than pumping water. Plow the ground as early as you can do it without mortaring and, if its subsoil needs it, break this up and pulverize it with a subsoil plow as explained in another chapter; then keep the capillary passages broken up by frequent cultivations so no crust will form and you can hold the moisture so plants will grow right along the first season. Then in the fall, when ground is frozen, put a mulch on heavily between the rows and lightly on the plants and the next spring this mulch will hold the water in the ground until after the berries are picked

HORSE-LEG IRRIGATION.

Propagating bed photographed August 3d. Observe that throughout this seventy acres of propagating bed that mother plants show their breeding by first building up large crowns before throwing out runners. Notice the plant at the man's feet over five feet in circumference and just starting runners proving the correctness of scientific breeding.

and then immediately remove or burn over and continue the cultivating.

Only in the most favorable locations can pumping of water be economically used, besides the machinery is very expensive and it is not necessary in successful berry growing. Have it, if you can, but understand it is not an absolute necessity, except in localities where irrigation must be practiced.

SPRAYING STRAWBERRIES.

About the only thing to spray for is rust or blight and sometimes the strawberry slug (larvae of the strawberry saw fly) finds a lodgment in your beds and occasionally leaf rollers get in and then you need to administer arsenics for insects only and copper sulphate (blue vitriol) for fungi. The latter should always be prepared under the formula for Bordeaux mixture.

All rusts and blights are forms of vegetable fungi and propagate by spores or one cell seeds. Fungus plants have no digestive apparatus of their own, but the spores (seeds) find a lodgment on the leaves of other plants and germinate, sending their misceliums or roots down into the tissues of the leaves and appropriating the elaborated sap and tearing the leaf to pieces so they cannot further digest the plant's food and thus growth is seriously checked. The spores are often carried from one plant to another by sticking to insects or by the wind.

In dark, cloudy days, and especially in rainy murky weather, the spores develop very fast and soon make other spores and do serious mischief.

Fungi is much like small pox. There is no danger of its spreading, if there are no live germs. What the fumes of carbolic acid and formaldehyde acid are to germ life, copper sulphate is to fungi. Sometimes customers complain that strawberry plants from our grounds rusted, but investigation showed that they were set on old ground or near others covered with spores. Since the vegetable parasite are almost indigenious to strawberries and some varieties are especially sensitive to their attacks, and more so on some soils than others, it may not be possible to entirely eradicate them, but they leave this farm just as free from spores as scientific spraying can make them.

Our visitors often ask us what we are spraying for now. We have to tell them we don't know as we ourselves do not see anything, but we explain that we are propagating plants along scientific lines and since spraying is only a preventive and not a cure that we feel bound to keep a coat of arsenic and Bordeaux mixture constantly on the leaves so the first spore of fungi that strikes a leaf or an insect dies at its first appearance.

Some plant growers advertise plants "Perfectly healthy" and free from disease germs when, as a matter of fact, they never spray at all and the leaves in the fall are covered with spores which go with the plant to develop on the grounds of the purchaser as soon as the

Spraying Our Propagating Beds.

No insect or fungi can live on this farm. They find every leaf coated with Bordeaux mixture and arsenate of lead and die at their first meal. Spraying is a part of the regular system of tillage. Perfect development requires perfect foliage without spores of rust or insects. You will not be likely to need to spray the garden patch or fruiting field. Strong healthy plants are the result of right methods in growing and protection in winter.

weather is favorable for their germination. Commencing immediately after setting our plants are sprayed as often as once in two weeks until growth stops in the fall and a last one late enough to kill the winter spores. If the weather at any time becomes murky and rainy we go over them oftener.

This matter is so exceedingly important that, if a nurseryman sprayed at all, he would mention that fact. I know one who sprayed spasmodically once or twice during the summer.

Spray the propagating bed thoroughly and in nine cases out of ten you will not need to spray the fruiting bed at all or the family garden bed, or in other words, set plants free from spores and there will be none to develop.

We use a cart and Spray Motor pump, giving a pressure of at least one hundred pounds to the square inch as seen in the photograph. A nozzle sets just above three rows and the fine mist floats down and under every leaf. Everything is covered.

SPRAY POISONS.

The remedy for all insects is arsenic. Nothing can eat arsenic and live. Paris green is the most popular of all poisons for spraying, but it contains an acid which is liable to burn the foliage and strawberries are especially sensitive to it.

This year I hit upon a plan which completely overcomes the difficulty. For each ounce of the Paris green take two ounces of the best stone lime, must be chunks, not air slacked. Put in an old tin can with poison and slack with boiling hot water so it will get very hot and let it stand, say, half an hour before diluting; the lime neutralizes the acid completely. When we fill the spray barrel we mix it for the next barrel and let it stand half an hour. It is not so good if a stock mixture is made up in advance, because it settles and is hard to divide equally and will not give uniformity.

Arsenate of lead never burns the foliage and will stick for a long time, even if heavy rains intervene. I do not use London purple, because its strength varies. Arsenic is not good for fungi or rust. Paris green four ounces, or arsenate of lead three pounds to 50 gallons of water.

Bordeaux mixture is only used for rusts, blights and other forms of fungi. Never for insects.

Take four pounds copper sulphate, put in an old gunny sack or basket and hang it in a barrel containing about 30 gallons of water and it will slack in a few hours; put in a copper boiler and heat it and it will dissolve in 20 minutes, but throw it in the bottom of the barrel so water cannot get to it and it will require several days. Now, take four pounds of the best stone lime, not air slacked, but solid chunks. It is much better to use boiling hot water to slack it. Let it stand a little while so it will slack thoroughly and then dilute it. Then take common window screen wire and strain it into the spray barrel and just when you are ready to spray, not before or it will curdle, put in the sulphate add water enough to make 50 gallons and keep agitated well. You can add the Paris green or arsenate of lead to this and spray all at once, if you choose. If you don't want so much, use the proportions.

We make a stock mixture. Slack 25 pounds of lime in boiling water and add enough to make 50 gallons of water. Then dissolve 25 pounds of the copper sulphate and you have half a pound of each to the gallon of water.

THE WINTER PROTECTION

Never buy plants of any nurseryman who does not mulch his beds and guarantee that the roots have not been broken or weakened by freezing and thawing during the winter. So important a matter would be mentioned in his catalog. It makes a great difference to you when many plants fail and leave long vacancies in the field. We grow a large acreage of thickly sowed corn especially for mulch. Every leaf and root comes out perfect in the spring and sure to grow.

Understand, the lime is used to neutralize the acid in the copper and if you use poor stuff or not enough it will burn the foliage. If you are not sure about the lime, use more of it.

Pottasium sulphide (liver of sulphur) is the best for mildew. In cold wet seasons the leaves curl up and on examination under glass show "spider webs" on the leaves. This is mildew. Use one-half oz. to the gal. of water. It is even better for this purpose than Bordeaux mixture.

WINTER PROTECTION.

It is not freezing that injures the plants, but when it freezes every night and a bright sun shines the next day it thaws and then the ground contracts and pulls the plants up, often straining or breaking the roots. If they are shaded with a light covering they will not thaw out on these bright days, but remain frozen solid and when a long warm spell does come the frost dissolves on the under side of the frozen part first so plants cannot be injured at all.

Any old straw or corn stover will do. Swale hay is very fine. Stable manure will do between the rows. It sometimes starts a weed growth, but they are easily disposed of. It must never be put on until after the ground freezes hard enough to enable a team to walk over it or so wheels will not break through. If put on early and a warm spell follows it would make the plants bleach and tender. Slight freezing when the earth is not frozen deep will do no harm as the foliage prevents it from thawing fast.

Always mulch your propagating bed. Put it on thin early and when the ground is frozen deep put on more so the ground will not thaw out early and keep the plants cold and dormant until you can have time to fit your ground. The roots callous during the winter and get ready to send out new roots when it comes warm and so a dormant plant will start off vigorously.

Never risk your money on any plant grower who does not mulch his plants. This matter is so important that he would not fail to call attention to it in his catalog if he did so. If he is one of those "cheap Johns" selling plants as low as $1.25 to $2.50 per M depend upon it they are not mulched, because he cannot afford to do it, and an investigation will show that there is no one offering plants at these prices who mulches his plants during winter.

Plants may live and bear fruit fairly well, if not disturbed on sandy soil when not mulched, because new roots will start from the crown, but when it freezes and thaws it will break the roots and then when taken up they will fail and leave long vacant spaces in your field for you to cultivate for nothing which takes the "cheapness' out of the "cheap John" plants. "Plants that grow" are plants that have been mulched and the same thing holds good when a nurseryman wants you to "save money" on plants. See that stock ordered has been properly developed, sprayed and mulched.

For the home garden use any old papers, carpets, leaves, or anything that will shade them, but not shut out the air entirely.

SELLING BERRIES.

Ever keep in mind that strawberries are the most delicious fruit God ever created for the enjoyment of man and that when rightfully managed every man, woman and child will have them throughout the whole season and

KEEP YOUR WAGON NEAT AND CLEAN. WEAR A GOOD SUIT OF CLOTHES.

so you need not especially worry about the market, when you also remember that two-thirds of the growers are "granddaddy blind" and will not accept the better methods.

The people will hail your coming with extreme delight, and if you are slow in getting around they will speedily hunt you up. They will be content with a quart for the first meal, but the urgent demands of the children for a second dish will add the quarts to daily requirements very fast. If I were courting a girl on the square with chances in favor of the other fellow I would manage to have her filled up just before I arrived with select specimens of my richest berries and then I would tarry till the effects wore off and take measures to prevent her getting any more until I was to come again, so she would be quite miserable while the other fellow was there. Get her? Why, of course, I would. You can trail a lady with strawberries as well as with diamonds and, if after you get her and she sours, you can sweeten her up much quicker with the delicious beauties than with ice cream soda. It is the easiest thing to sell what every one is looking for and a tough job to sell stuff people do not want. People buy only what gives them pleasure and home endearments. I always found it especially pleasant to sell direct to families. I do not mean to peddle from house to house and use much time in arguing and dickering about prices. When a person intimates other people are selling for less, I always break negotiations at once, courteously but firmly, telling them other people do not fix the price of my berries, that the law of demand and supply governs the price, that quality makes a market, and state truly that you cannot supply all your customers anyhow and pass right along. Don't worry nor cut prices. I always enjoy having "Granddaddy blind" people, or those who live and grow berries in the light of the past century, tagging around after me trying to get my customers by offering berries a few cents less. They sometimes do switch off for a day or two, but they soon see the difference and come back with ample apologies and promises of steadfastness in the future. Above all, never quarrel with a customer. Express your regrets and leave them in a mood to come back without a trace of humility. In these times of ready cash and plenty of work you will get six where you lose one. Never call at a house but once, unless they become a regular customer. It takes too much time. If they want an occasional quart, let them come to the wagon. Make few contracts at first, because each family will double up on their daily requirements as berries hasten their ripening.

Furnish a ticket to those you care to trust for a week. The following is the form I use.

DON'T FORGET TO BRING THIS CARD.

TIME IS PRECIOUS.

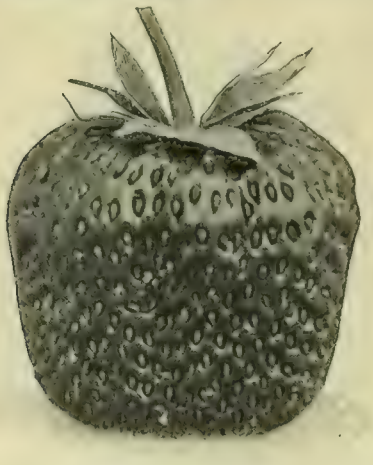
When you hear our bell ring kindly HAVE THIS CARD READY AND BE AT THE DOOR so we can make the proper entry and deliver the fruit with as little delay as possible. Payment expected every Monday.

M.....

In account with R. M. KELLOGG.

Date	Quarts Wanted	KIND	Dr.	Cr.

This is printed on manilla cardboard about six inches long and three inches wide. Punch a little hole at the top and have a little brass hook which you get at the hardware store at



CHALLENGE (B).

MEDIUM. It roots deeply and stands drought splendidly, besides its berries are of high quality and beautiful. Only second year of selection and restriction, but stools up readily and shows business.

HERO (B).

MEDIUM TO LATE. A most vigorous grower and reliable variety. Berries deep bright red, quite firm and splendid flavor and a strong pollenizer. All soils. More largely called for last year which is an evidence of popularity. Splendid berry for canning and family garden. Fourth year of selection and restriction.

five cents per dozen. Hang the card high by the kitchen door where it is always kept and ready when your bell rings. It saves you much time. Carry an assortment of berries in the crate, set the crate down at the feet of the mistress note the price and she will instantly make the selection, quickly make the entry on the card, gather up the empty boxes she has brought out and skip to the next customer. I have actually made an excess of $20.00 per day in commissions I should have paid to the groceryman to sell this same fruit.

One especial advantage is you do not have to make change and ladies do not always have money and so you do not miss sales, besides you know people always buy more when they get a short time credit. Merchants and business men prefer to have a bill sent them at the close of the season and this ticket will be a voucher as to correctness of bill; but to all others insist on prompt payment. Don't let bills run. There are lots of sneaks who get in debt to "earn" a living. If they cannot pay for one week rest assured they cannot and will not pay for two weeks.

SELLING TO MERCHANTS.

If your fruit will attract other trade to a store by giving the store an additional notoriety, you can arrange with the leading dealer to handle your berries as a special feature of his business and he will be willing to let you name the price and handle them generally on a margin of a cent a quart and it will pay you to do a little advertising for him. I fill the papers with short squibs at the opening of the season, reading, "To be happy, eat Kellogg's strawberries. For sale only at Wilson's grocery store, or from the wagon on the street."

Get out some handbills and mail one to each family. It costs a cent postage and a little for printing, but is the cheapest way to nail customers and get them to thinking about you. Take a few quarts to the editor and the office force and let him write you up. People don't forget editorial endorsements because they know editors never publish until they know the exact facts and so people have confidence in what they say. "I know it because I saw it in the papers," is sometimes spoken as a pun, but everybody feels that way about it.

Study the catalog and all sources of information and teach your customers different ways of preserving strawberries and how to make them buy and put them up for winter use. You can double up on purchases.

Always have your wagon look tidy and boxes clean and bright and wear a good business suit and put a little blacking on your shoes. It is cheap stuff and will make you look attractive. They don't like to buy berries of a dirty looking fellow and with a pocket full of money you can't afford to look slouchy.

Never pick berries on Sunday. There is no need of it. Hitch up and take your family to church. Hold your head high and gain a recognition as a business farmer and your neighbors will very gladly accord you the place.

BEAUTIFUL BERRIES.

The most beautiful berries are true to type, above medium and all of the same size. That is the advantage of Pedigree Plants. Their vigor enables them to bring their berries to the full size of their variety. Some excessively large berries are needed for advertising purposes to get people to talking about you, but the average family prefers above medium in size, good texture and rich flavor, hence the successful grower plants most largely of the medium sized varieties, and then gives careful culture to make them all grow large. These are the money-makers.

NICK OHMER (B).

MEDIUM TO LATE. Now in general cultivation. Large, bright red. Requires strong, rich land when it meets full expectations. Not desirable for light sand or poor soil. Pedigree, six years.

PRESIDENT (B).

LATE. The executive variety. Introduced last year. It is a seedling of the Crescent fertilized with Nick Ohmer, a parentage that could give it a boom. Its berries are large, clear bright red and of a most delicious aromatic flavor. It will be especially fine for serving with stems. Bear in mind berries of this kind sell at double prices and picking costs only a little more.

CARE OF AN OLD BED.

When a plant has borne a large crop of berries its internal machinery is worn out which is another term used for exhaustion.

The sexual organs of a strawberry are in the flowers, but back of that is the machinery which makes the flowers and the plant must be built over during the summer and fall. It will generally pay to grow two and often three crops before plowing under, but a crop of from three to five hundred bushels is a severe strain and unless the ground is very rich so plants can be recuperated it will generally pay better to renew at the close of second crop. If you decide to plow under, do it at once. First put on all the manure you can, then turn under and sow to cow peas. Plow these under as early as October 1st and sow not less than three bushels of rye per acre. This will protect the surface of the soil from pattering rain drops and running water which puddles the surface and injures land seriously during the winter. Spread any manure you have on the rye during the winter. Do not leave in piles, but spread at once so the rain will wash the juices into the ground then plow again in the early spring and you may re-set the land, but if you can spare it for another year add more manure and sow cow peas again. This is the way to treat soil to make it produce the biggest crops. Don't starve your land; keep something growing on it all the time and make humus.

Immediately after the last picking put on the mowing machine or scythe and mow off the top. The leaves have done their work and are of little use to the plant and a careful series of experiments proves to me that they had better be removed and place given to new ones. The old leaves are weak and tissues more or less broken and dead and since fungi always feeds on decayed matter it attacks them vigorously and the spores of rust from these old leaves will attack the new foliage; and as insects are always prowling around I have found it profitable to burn over the old bed every year, even if I were going to plow it under at once. The labor of doing so is not so much as pulling out the weeds. The larvae of leaf rollers and slugs are in the leaves at this time and all are destroyed. We only need enough rubbish to burn the row over. If there is heavy mulching a part can be removed and piled up for next winter.

Stir up the mulch and if there is not too much of it put it on the row and when dry, set fire. It is better to have a strong wind so it will pass over rapidly. If there are trees or buildings on the windward side, back-fire a short distance. Be on hand with a fork to stir up and keep the fire going.

A person who has never done this work would feel the whole patch was dead, but in a few days you will see the green leaves peeping up and in two or three weeks the leaves will be out in force and as green and healthy as any spring set plants. If it is a very dry time they will start slowly, but be patient. They will spring up as soon as rain comes. If you have grown them in the hedge row, you need only cultivate, breaking the ground quite deeply, but first put on any manure you may have. If it is rotted, put on liberally, or put on a good, strong dose of high grade commercial fertilizer. Be liberal with it. Anywhere from three to ten hundred pounds to the acre. The latter amount will pay the biggest dividends. Work it into the soil thoroughly, but do not disturb the plants too much.

Some people put on a spike tooth harrow and tear the surface to pieces. I don't like to do this, it is too harsh. I prefer to treat plants

MARSHALL (B).

LATE. Just look at the photograph and remember it is deep blood red to the center, of a rich, wild berry aromatic flavor and then you have it. Bigness and goodness are its essential features. It may not produce as many bushels to the acre as some others, but it sells at the top notch. Grow it in hedge row for best results. Give it plenty of room, for bigness is its strong fort. Give it strong, rich soil. A pedigree of ten years.

ARIZONA (B).

This is the great California everbearing. It develops its buds at any time and keeps right on setting new buds and ripe ones forming at the same time. As a rule, everbearing sorts have not been successful in the East, but it has been widely tested and I feel like offering it to customers who love berries all the fall. The berries are irregular in shape, but rich in flavor.

GRANVILLE (B).

We have now seen the fruit of this variety for two years and believe it very desirable and so list it again for trial. The berries are large, very delicious and is sure to win favor. I see no weakness in its organism and so commend it warmly for trial.

MRS. HANNA (B). MARK HANNA (B).

We offer these two sorts which originated in Virginia by a friend and admirer of Mark Hanna, and offer them for testing. If they have the machinery that appears to be within them, they will turn out some big, red berries. Offered for testing by dozen only.

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more tenderly and put them in a position to begin heavy work at once. We first cultivate and then go over them with a garden hoe. If runners have set too thickly and must be cut out, give preference to young plants, even if they are smaller.

The cultivation should always be given the day the burning has taken place. The berry pickers and rain have pressed the ground down hard and, if left unprotected, the ground will dry out very fast and should be broken up at once.

If you have grown in the wide matted row (and I hope you do not), then narrow up the row with a small mouldboard plow by turning a furrow away from each side and then cultivate it back level.

As already pointed out the machinery to produce new fruit buds is in the plant, but it is weak and must be pushed forward by all possible means. Cultivate every week and after every rain and by fall the plants will be rebuilt and ready for next spring's fruitage. Ever bear in mind that the berry crop is made the previous year. The vegetative parts grow early in the season and the cool weather of the fall checks the wood growth and gives the fruit buds a chance to come forward. When the first warm days of spring come the buds bloom and fruit rapidly forms and so the crop depends on the previous season's work.

SPRING CULTIVATION OF OLD BEDS.

There is much difference of opinion about cultivating in the spring and as to whether it should be done depends on how you do it. The winter rains saturate the surface and puddles it so it settles down into a compact mass, excluding the air, and since the plants are to undergo the great strain of seed and fruit production, the foods should be made available in large quantities and so the surface should be broken up to conserve moisture and let the air into the capillary passages so it can find its way all through the ground. If there is mulching, begin on one side and rake it over one row and cultivate that; then rake over the next and cultivate that until all the surface has been stirred.

Under no circumstances must the cultivator go deep enough to tear the roots. It only needs to break the surface crust. Many people practice putting the straw directly on the plants in the fall and not between the rows. In the spring they cultivate as quick as the ground is dry enough and then rake the straw to the edges to keep the berries as clean as possible.

Avoid tramping the cultivated parts. Wherever you step it packs the surface so capillary attraction is perfect and water will reach the surface and dry off. It has been estimated that a quart of water will evaporate from every track each day.

I wish to especially emphasize that no cultivating must be done while the plants are in bloom. The pistils are especially sensitive then. The receiving fluids which form on the stigma to catch and hold the pollen are injured, if any dirt or dust is thrown on them, or if they are bruised by raking over the straw, and then they will not fertilize, but leave a deformed and unsightly berry. It would be better to wait until fruit sets, but far better to do the work before bloom.

Don't be afraid of expense. Do things right and at the right time so the plants can put in their time to good advantage. You do your part well and the plants will do theirs and the cash account will come out all right. Always make a sharp distinction between business economy and penuriousness. The former leads to wealth; the latter to poverty.

MAGNITUDE OF STRAWBERRY GROWING.

It has been estimated that ninety million dollars are paid out every year for strawber-

BRANDYWINE (B).

LATE. Another pet of pets. Big, deep blood red clear to the center, a flavor peculiar to itself and one of the best canning berries of all the late varieties. The demand for the past five years has been greater than any other late variety. Mates the late pistillates exactly and has strong potent pollen. Holds its fruit entirely up from the ground. Pedigree, eleven years.

MIDNIGHT (B).

Midnight because it is the last hour of the last day of the strawberry season. Brother Hale hit it pretty close and it will prove a success under general test. Must have rich, strong soil and good culture and then it is O. K.

ries. This is an enormous sum and at first thought seems high, but after all it is only a little over a dollar per capita of population and I dare say, if authentic figures could be had it would be found below the actual amount consumed.

We do know that everybody eats them "from dawn to dark," if they can get them. The first dish is hailed with delight and the last dish of the season taken with extreme regret, and the more delicious they are the more they will eat and the delicious things will soon so work on the mind of a customer, if he is operated on skillfully by tempting him with different varieties, that he just becomes about helpless. He may squirm some on the price, but he will keep right on buying and eating and the babies will squall like bedlam, if they cannot have an increased allowance.

CHICKENS AND STRAWBERRIES.

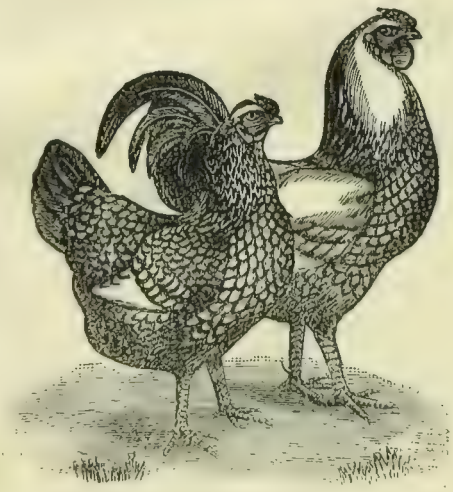
Here is a great combination. The chickens to furnish manure, eat up the bugs and insects, and to provide spending money while the berries are being grown.

Bone meal and meat are the great fertilizers for strawberries. Add a little potash and it **is superior to the best** Peruvian Guano.

It must be ground fine, and no machine on earth can grind it so fine as the gizzard of a chicken. Bones and scrap meat can be had dirt cheap at all the markets. Feed it liberally, and the chickens will shell out the eggs as well as the fertilizer.

A good flock of chickens is far better than a cow stable.

Compost the droppings with about four times their bulk of any loamy soil as fast as you clean out the roosts. This compost should be put under cover and kept dry. Mix it well



and sow broadcast and harrow in thoroughly, before setting the plants.

Never mix ashes or lime with the manure before putting it into the soil. This will act as a disenfectant and set the nitrogen free so it will escape.

Use land plaster under the roost. This absorbs the ammonia and holds it until it is in the soil.

The manure is so strong when not diluted with soil that if any quantity comes next to the roots it would burn them, and thus injure the plants.

I should not like to be a grasshopper, bug or worm where a flock of young chickens were running around. I never had plants injured by their running over them. Chickens only need to be shut up while berries are ripening.

THE FAMILY STRAWBERRY GARDEN.

Happy souls in the strawberry bed. "Bite bigger, Susie, there are millions of them, so big, so delicious," so beautiful, so refreshing, so soul satisfying, the household so delightfully loving that no family row is known to have occurred during the strawberry season. No divorces, no tearful good byes to children, all at home, all happy. Could a man commit a crime with his stomach full of strawberries? Never heard of.

THE FRUIT GARDEN.

There is nothing on earth so fascinating to children as growing berries, and especially when they have something nice. They become wonderfully interested in thoroughbred animals and the same is true of a plant possessing unusual qualities and they wait with eagerness the time when the berries begin to ripen; and this is all the more so when they are to share in the profits and call it all their own. If you want children to do business, begin young and teach them how by letting them do it. Let them grow and sell berries. You furnish the land and plants and they do the work with the understanding they are to have all, except what is wanted for the table, and rest assured they will appreciate it and gratefully bring the big ones to parents as a love token and mark of appreciation. If you want children to stay at home make home attractive. They see all the nice fruits in the city and village markets for "city folks" to enjoy and do not have it at home; they long for a change. They are impressed with the truth that these fruits were grown on the farm and feel cross and neglected when they do not have them.

No spot on the farm or village lot can be made to give so much real luxury as the strawberry bed. You can never realize how utterly delicious a strawberry is until you have grown it yourself and picked it from the vine. They make the most beautiful flower bed for a month and then the lusty green berries try to hide from you in the beautiful foliage and the first you know begin to stick their big, red noses out from under the leaves so tantalizingly, not quite ripe yet; wait a day or so. It's pretty tough to have to wait, but there is a great feast for six weeks right at hand. Shortcake, strawberries and cream and sunpreserved strawberries all winter. Oh, bless us! We wish the whole world were nothing but a big strawberry bed.

COST.

Well, they will cost a cash outlay of much less than a cent per quart. The pleasure of petting the plants and working among them in the cool of the evening cannot be counted. There are no boxes to pay for and no pickers to pay. No fertilizers to buy, because there is always enough lying around which can be gathered up and worked into the ground.

Spade the ground up, if the plow cannot be used, and rake it down fine. Take a rope the length of the bed, one person at each end, lay it down where the row is to be and saw it back and forth to make a mark. Then calculate the distance apart for the plants, and step with both feet to firm the soil where the plant is to be set. You cannot tell how deep to put the plant when the ground is left loose.

Put the plants in a pan of water, if the ground is dry and the sun shining. Strawberry plants are very hardy, but left long in sunshine and wind they will perish. Take a trowel or any tool that will make a hole so the roots can be put in straight and separated like a fan so soft mellow earth will come in contact with every part; leave the crown or body of the plant just as high as you can and have all the roots under ground. The general mistake is to set them too deep. When you have set a row then go back and tramp the soil down hard all

DORNAN (B).

THE LATEST. This became known in west Michigan as the Uncle Jim and attracted so much attention on the Chicago market, selling at double prices, that the Mich. State Horticulture Society investigated it and honored the originator by naming it after him, "Uucle Jim" Dornan. When all other varieties are gone then Dornan steps in with his big beauties and captures the market. Big, bright deep scarlet fellows, so big in plant and so productive, it is rapidly finding place in every fruit garden. Pedigree, five years.

around the plant. If the ground is quite wet, you may set all the plants before firming them and at once take a hoe or garden rake and loosen up the surface and make it as fine as possible so the moisture in the soil cannot get away.

You must pick the blossom buds off the first year just as quick as you can see them. It should be done before they bloom to prevent pollen exhaustion. When runners start straighten them out in line with the other plants, and when two plants have formed on each side, pinch or cut off all others with the hoe and then the plants will stool up, make many fruit crowns and strong buds. Each plant should produce from two to five quarts. (See article on "Hedge Row.")

You must not let your runners go at random for, if your land is as rich as it should be, they will mat so thick the sun cannot shine on the crown and then they will not fruit. (See article on "Sunshine.")

Hoe every week all summer and when the ground freezes mulch with any old carpets, blankets, felt paper, straw, or most anything that will not settle down so as to shut out the air, but merely shade the ground so it will not thaw at the surface on bright winter days and freeze again at night. (See article on "Mulching.")

Next spring and two years after you will have a feast.

New beds should be set every three years and oftener, if not well cared for. The farmer should manage to have the rows long so he can cultivate with the horse.

OREGON IRON CLAD (B).

VERY LATE. Originated in Oregon and in many localities exclusively grown there, but meets equal success throughout the East. I half suspect it gets its "Iron Clad" from the fact that it blooms so late it is never killed by spring frosts and yields a crop, "season or no season." Anyway it is a hummer and a big one. Two selections only, but well developed. It is a good shipper.

HOME LUXURIES.

Every mother knows she builds the affection of her husband and children by what she puts on the table and I confess my heart goes out for her in deepest sympathy when I remember she must prepare three meals per day, or 1,095 meals every year, and generally nothing to go to except the pork barrel, potato bin and flour box. I believe in American freedom and that all should be permitted to do just as they please so long as they do not interfere with the rights of another, but suggest to mothers that some kind of a heavy tax be placed on recalcitrant husbands who will not supply some of these "cost nothing luxuries" for his family. The wife has a right to insist on these things.

Photograph of One Day's Mail.

ANSWERING QUESTIONS.

In this brief treatise on plant physiology and cultural methods it is impossible to give all the details of every department of the work.

MAXIMUS (B).

LATE. Same as Corsican. Must have heavy, rich land and plants must be set very close as it makes comparatively few runners and stools up easily. It shows thorough breeding and will put a wind-row of berries around the plant that is quite interesting. Berries deep red, very attractive and O. K. Pedigree, nine years.

PARKER EARLE (B).

Parker Earle is peculiar to itself. It is perhaps the most productive variety we have when free from exhaustion, but let it overbear once and then you get an immense amount of bloom and sets a great number of berries, but fail to bring them to maturity. On our vigorous thoroughbred plants I have counted as high as 390 berries on one plant and of these fully 350 attained marketable size and 250 would be classed "above medium." It makes very few runners, but naturally stools up fast and should always be set close together and always on rich land. It is about the only one to be commended for low land, and this because of double bloom in case of frost. Pedigree, fifteen years.

Parker Earle Improved known as Arnot's Parker Earle (B) so closely resembles it that a seprate description is unnecessary. Eight years pedigree.

I cordially invite correspondence with all fruit growers and will take pleasure in giving them the benefit of my experience whenever it will be of service to them.

My success depends upon your success, and I am especially anxious that growers stocking their grounds with my pedigree plants shall do things at the right time and in the right way.

Among the opportunities I have for keeping in touch with the most progressive fruit growers of the day, I may be permitted to mention that I have a horticultural library containing all the modern books, the reports of the proproceedings of many State Horticultural Societies, and am a subscriber and contributor to all leading horticultural papers, and have long been identified with the Michigan State Horticultural Society, and for the past two years have served as its president, and president of the West Michigan Horticultural Society which covers the great fruit belt of western Michigan and am also an honorary member of several other State societies before which I have delivered lectures.

I have also been regularly employed by the Michigan State Board of Agriculture to deliver lectures, conduct institutes and lead discussions in fruit centers.

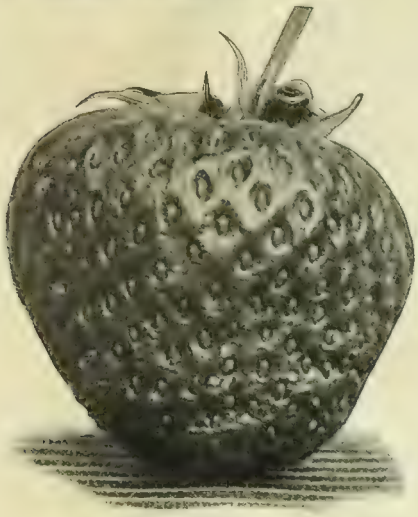
My large correspondence gives me practically an experiment station in every community in the country. They tell me of their methods of work, of the varieties they have tried, and the results obtained. With all these sources of reliable information, I believe I can be of service, not only to commercial growers, but to persons growing fruit for their own table. Write me at any time giving particulars and I shall be able to give you some valuable pointers.

I give personal attention to all letters in the order in which they are received, except in the rush of the packing season in April, when they are filed and considered as work will permit. My whole time is then given to the filling of orders and arranging experimental grounds and propagating beds.

In this connection let me ask a favor. My working time runs pretty close to fifteen hours per day, and while I have an efficient superintendent, and stenographer, yet all the selections and tillage are done under my own personal supervision, and, in order that I may dispose of this volume of correspondence promptly, I am obliged to ask my friends to be very brief.

Omit all personal matters and apologies for writing. State your questions at once, fully and pointedly, and do not discuss your love of fruit growing through many pages as so many do. I shall be especially pleased to learn of any experiences you may have had of fruit growing and results obtained written in a concise form. I only want you to be brief so as to make it possible for me to get through with this work promptly, so that my patrons may receive the information they need in time to be of service to them.

Special notice. All questions to be answered by me must be written on separate sheet of paper from the order sheet. All orders go direct to the filing clerk and all questions are sent to my desk, and answered in a separate



SAMPLE (P).

LATE. Somebody hold my coat while I jump up and yell till I get your ear and tell you of Sample. It's no use. You will be a doubting Thomas until you thrust your hand in among the plants and see the big, blood red shiny fellows piled up, well, it's hardly safe to tell the truth because people will doubt it. Did it ever fail? Perhaps so, but I never heard of it. Enthusiasm, well I am not the only one suffering from it. Every one goes wild over it. Eight year pedigree.

SEAFORD (P).

LATE. There is a marked difference betweeen Sample and Seaford, both in foliage and fruit, but there is a sort of neck and neck race between them for popularity, both having admirers and so for the sake of variety you should have both. It has an eight years' pedigree.

letter. They cannot receive attention if written on the order blank. Do not fail to give name and post office address in full every time you write. If you fail to get an answer it will be because you forgot these things. Write your name so plain that we shall not have to guess at it.

If you really cannot write your name and post office plain, oblige me by letting your wife or daughter write it. We are obliged to guess at many names and addresses and many forget to put them on at all.

PLEASURES OF BERRY GROWING.

Pleasure comes from success. Success comes from complying with the conditions of success. There are certain laws which nature has provided for the government of all life and for the operating of all machinery and these laws must be complied with and, if this is done, success is sure to follow. It is not the fellow who works the hardest with his hands that gets rich the quickest. It is the combination of brain and muscle and this breeds enthusiasm which spurs the man to activity.

John D. Rockefellow has millions and millions of dollars which can in no way contribute to his happiness, and yet to-day he is working harder than any day laborer. He simply finds more pleasure in making new combinations of muscle and brains and enjoys the success arising out of it more than spending the money.

A fellow who hears his berries praised by every one and finds his customers will pay whatever he asks for them is spurred to better them in every way possible and will do better and better. He will enjoy the world hugely while the fellow who can never see the eternal fitness of things and cannot recognize true value, who thinks one thing cheap at a cent and another dear at a dollar will always have pennies while the discerning man gets his dollars.

It is one of the happiest thoughts of my life that my old age is to be spent among fruits and flowers. I have a beautiful home and abundant means and I am in debt to my berry plants for it all. They are my pets and I love them dearly. I never go to a ball play or take vacations because I find more pleasure in the field. You cannot make me feel that these big, fat, lusty plants do not recognize me when I go among them. They nod me a pleasant "Good morning," and when I relieve them from the presence of a troublesome weed and fix up the soil around them, the "Thank you," which my imagination hears is appreciated as it was when it came from that lovely girl, Orrilla Richards, whom I courted and married.

GOD BLESS THE RICH.

I despise the miser, the man who has a great faculty for squeezing the poor and making money, lives in rags and apparent poverty, hording his gold in old stockings or in the ground and finally starves to death because he is too stingy to buy bread. Bury him in a fence corner and take his gold and build hospitals and factories where people who have not learned how easily they can build up a business of their own, but must struggle on as wage earners, may find employment and means of supporting their families.

I have absolute contempt for the dude who sneers at me because my hands are calloused with honest labor. A man who labors day by day, supports his family and educates his children and contributes to the world all he

AROMA (B).

LATE. One of the very best extra late pollenizers and a splendid berry. Beautiful in the box and a box filler. A pedigree showing twelve years of selection and restriction has made it perfect in all its parts. The largest orders we have ever received for a perfect flower was for the Aroma which proves its popularity.

GANDY (B).

LATE. One of the most popular sorts. In many localities the "Gandy Association" have the markets all to themselves during its season. It ripens its berries all at once, only giving two or three good pickings, but they sell at the top notch of the late season. Pedigree of nineteen years of continuous selection and restriction. Give it good culture and it will produce enough to satisfy any one.

receives from it, always maintaining his personal freedom is the American nobleman.

Nearly all rich men are old men. They were born poor, but saved their earnings, adopted new methods and machinery, they worked hard, plunging their earnings back into the business where it might make more money, keeping fully abreast of all improvements in their callings. They not only labor incessantly themselves because of their enthusiasm, but learn to direct the labor of others.

I remember when steel rails cost $200.00 per ton. Andrew Carnagie improved the process of Bessemer, invented machinery and introduced new methods whereby he was able to produce steel rails at an actual cost of $12.00 per ton and in that way accumulated many millions of dollars and then donated it to build libraries all over the country where the accumulated wisdom of the ages stored in books might be within reach of our children.

Old Commodore Vanderbilt was a vegetable gardener on Long Island Sound and grew the finest garden truck found on the markets of New York. He took his produce to the city in a boat and so got to studying how he could build a better boat for carrying passengers and so improved them that he received great patronage and soon owned so many boats that all the people honored him by calling him commodore.

The old Hudson River railroad was a ramshackle affair until Mr. Vanderbilt got hold of it and made it the finest railroad in all the known world and it soon made him money so he bought the New York Central and other roads and made them so luxurious that people love to travel over them and so he by his contributions to human happiness became the great railroad king and multi-millionaire of the world. Who regrets that Vanderbilt did all this? One of the grandsons, with all his millions, put on the greasy overalls and fired an engine until he discovered defects and invented the best fire box which all railroads are now using, and with all this what shall be said of those who take the richest, the most delicious, the most general favorite, and the best fruit God ever created and discover the inherent weakness of the plant and teaches the people how to develop it and make it strong so it would make two "Big, Red Berries" grow where one little one grew before.

My friend, do you want to be the most beloved man in the community in which you live? If so, then adopt the twentieth century methods and grow the finest berries in the country. You need but little capital, a good deal of pluck and perseverance and you can win, provide luxuriously for your family, as Frank E. Beatty did, and accumulate a handsome fortune for your old age.

HOW TO GET RICH.

To get rich you must do more for other people than they do for you. They will pay you for what you do for them and you must pay for what they do for you and your property and money shows the difference or balance of trade.

In the summer of 1861 I lived at New Haven, Mich. Thomas A. Edison, the great inventor, was a newsboy on the Grand Trunk train between Detroit and Port Huron and I bought many papers of him and remember him very well as a little, hustling boy. He then had a lot of electrical devices fixed up in the baggage car and one day fixed up some stuff while he was making his experiments and had an explosion which came near killing the baggageman and Edison was discharged. The family was very poor then and had hard work

BUBACH (P).

LATE. Probably not a strawberry grower in the country that has not fruited and admired Bubach. It must have rich, strong soil and then it is a market commander. Do not set it on light or poor soil. Seventeen years of selection and restriction.

ROUGH RIDER (B).

LATE. At the time this berry was being introduced President Roosevelt was leading his rough riders in Cuba. The world was electrified by the dash of this regiment and the introducer took advantage of the catchy name. The variety has met with phenomenal success as the late berry in Oswego County, New York, and its merits proven, but prices of plants were high, many were taken from old, exhausted beds and these purchasers were, of course, inclined to turn it down. It requires heavy, rich land, and then it is all that was ever claimed for it. Its pedigree here is five years.

to pick up actual necessities. To-day he is a multi-millionaire, but every dollar is honestly his. What amount of money would it take to induce the people not to use the telephone, electric light, phonograph and a thousand other world famous inventions. For every dollar he has the world has received a thousand, so the world is greatly in debt to him and all nations have thrust honors and decorations on him. It would have taken him many thousands of years to have accumulated this property as a common day laborer.

Now, suppose you take a piece of ground and make it very rich and buy a lot of strawberry plants, all vigorous fellows with strong constitutions, and pay, say, half a cent apiece for them, and then put about ten cents worth of labor on them and the world gladly pays you fifty cents for the fruit. That is an honest value and carries with it honor to you and the respect of the community.

The world applauds success and despises failure. To succeed you must climb above an ordinary wage earner, you must strike out and do something extra. Of course, it is of the highest honor to be a wage earner, if you are a good workman. Chas. Schwab, of the steel trust, received a salary of a million dollars a year and his salary was low because he contributed to the great corporation much more than that and made it a success.

HUNTING A BERRY FARM.

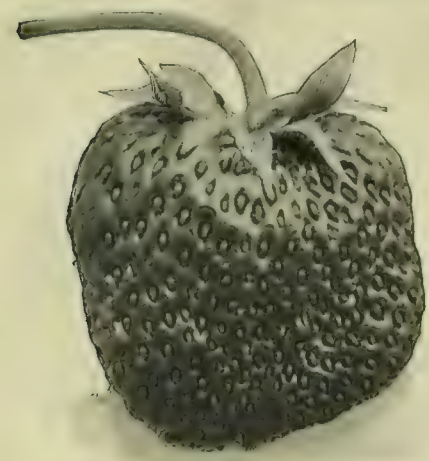
I am often asked, "Where would you go to start a berry farm?" The answer is, I would go anywhere there is good land and a few people. Every intelligent person on earth loves the strawberry. It is not only the most delicious fruit ever created, but people will pay a higher price for it. Go where you will you will find customers and, if there are others in the business I would command my liberal share of patronage by being worthy of it and growing better fruit than they do. I would have the machinery in every plant I cultivate, perfect, that I should get big pay for the care I bestowed upon it. I would use great care not to starve my family and children by trying to raise berries on plants which had no machinery, or weak worn out machinery in their bodies.

I would not spend a dollar running around the country, but I would locate where eventually I could have a beautiful home with advantages of school and church. God pity the man who has no ambition to have a home of his own.

MAKING A BEGINNING.

If I did not have money enough to buy land, I would lease a piece for a term of years with a contract privilege of buying it. I would not take poor land as a gift. Buy rich land, if you can get it; if not, buy poor land and make it rich. Spend your money for manure. Get in debt for it; get it, anyhow or any way. Get what you can and set a small patch, then sow the balance to cow peas or some other leguminous plants. Buy potash and phosphoric acid, say, about three hundred pounds of each, and sow before you sow the cow peas. This will make them grow fast. This class of plants gather the needed nitrogen from the air. They store it in their bodies and when plowed under it becomes available to the next plants. You can get into the ground cheaper this way than any other way.

Get all the stable manure you can find and in this way you will soon have land as rich as a garden.



BISMARK (B).

LATE. So closely resembles Bubach in fruit and foliage it would be hard to tell them apart except when in bloom, one being perfect and the other imperfect in flower. Pedigree, ten years.

BIG LATE (B).

Later than anything, but no plants obtainable this year at any price. No, not for dollars each. I have never introduced a variety because I could not find one or produce a seedling that I felt absolutely sure was a thing far better than anything now under cultivation. I have been content to develop and bring out the higher qualities of old standard sorts, but now I straighten up and with the fullest confidence that it is superior in bigness, richness, lateness, prettyness, moneygettingness, family happiness and all other "nesses" that mean betterness, so next year I shall launch it. Don't ask for it now for your gold will not get it, but I just want to show the photograph so you can whet your appetite for it next season.

Don't worry about your debts. One big crop will fix them. Many times I have grown single crops that paid for the land, all the manuring, the cost of the plants, all the expense of tillage, picking, marketing, and all other expenses and had lots of pin money for myself and wife left; but I never did it on poor, unmanured land. I have often exceeded five hundred bushels per acre and, if you will kindly visit me next fruiting time, if climatic conditions are reasonably favorable, I will show you even more than that, right on the plants.

Just take your pencil and figure up how much five hundred bushels of berries will come to at a shilling a quart. Never mind what common berries sell for. I know that they sell for a few cents per quart, but strictly fancy berries always command more than a shilling and you will soon learn how to get it.

COMPETITION IN BUSINESS.

Business always goes to the fellow who can give the largest amount for the least money. This is always a question of facilities for production and a correct knowledge concerning the operation of his machinery. People do love to patronize an up-to-date man and they do despise a fellow that is a back number. They love to boost a fellow who is going up hill and kick him, if he is going down.

Every one can make more money when wages are high because every one buys more. It is not a question of overstocking the market with anything, but it is a question of consumption, and consumption is always governed by quality. A person always eats two big dishes of berries when quality is high and don't care for even one when the quality is low.

I know the poor fellows who tag around after me seeing me unload the big, lusty berries into people's houses at a big price were utterly miserable because they had no purchasers, while I was supremely happy because I had more than I could attend to. It is all a question as to how you breed plants, manure and cultivate. The fellow who worked for nothing and paid for the privilege of being boss probably got as much pleasure out of his money as he could in any other way. I confess to a good deal of pride in being boss.

No potato hooks used here in digging plants, No crowns broken or mutilated. No plant exposed to the wind and sunshine for a single instant. Every plant grows if properly cared for.

DIGGING THE PLANTS.

The mulch is removed and old leaves and stems are picked off in the row before plants are lifted because there is no danger of injuring the crowns in doing it then.

The express offices are located in this corner of the packing house where two companies have their offices and bill the plants direct to destination. They meet the train at the depot. Freight shipments are billed out here for each train. Mail orders reach this post office in time for first mail after packing. Eight express and mail trains and nine freight trains take the plants every day. Every department is in perfect systematic order. Perfect plants, perfect digging and packing by experts under a skilled superintendent with no exposure of roots. These are the plants that grow.

A six-tined fork is inserted under the plant and it is lifted in such a way that no roots are broken or crowns bruised. They are instantly picked up and put in a wet bag, so they are never exposed to sun and wind, and the bag is carefully labeled and sent immediately to the packing house where they are cleaned, counted, tied in bunches, labeled and the orders are made up.

The entire row is taken up and all old plants and any with immature roots are thrown away.

CARE OF PLANTS.

A postal card will be mailed to you when the plants are shipped, so you should be on the lookout for them. Our system of packing is the most perfect that can be devised, and plants the last season were shipped to the most distant points without the loss of a plant, and if you give them the same care that we do here every one of them will grow.

When you receive the package, if you are not ready to set them out, do not leave them in the package, but heel them in by digging a small trench in some shady place, and putting in plants as seen in engraving.

Heeling in Plants.

Before opening the package give them a thorough wetting before exposing the roots in puting them in the trench. Do not wet them until you are ready to take them out. Put the whole package into the water for a few minutes or pour water on it slowly until

THE INTERIOR OF THE PACKING HOUSE.

A snap shot at the dinner hour. On the left of the aisle in front stands A. A. Udell, a Lieutenant in the regiment with President William McKinley during the war. He has been our superintendent of this department for many years, a strict disciplinarian and a genial gentlemen. The women clean and count the plants. Every department is under a responsible foreman. The room is kept cold and damp, and the windows shaded. Each variety has its own stall, no confusion, no talking and no nonsense during working hours. Business dispatched with absolute accuracy. The most perfectly equipped packing house in America.

you know that every root is soaked and then heel them in at once. Put a few plants in the trench and spread them out and put the soil on thinly, but press it in among the roots, then another layer of plants.

Keep the labels on the plants and exercise extreme care not to mix the varieties. Every bunch has a label on it, and these should be stuck in the ground so there can be no mistake. The plants can be kept in the trenches for a long time, if the weather is not suitable for setting them. Do not wet them too much so as to bake the soil on top. The ground must be only moist. If early in spring, and indications are for a heavy frost, spread an old blanket or put some straw over them.

While a strawberry will endure shipment from ocean to ocean and even foreign ports, when skillfully packed in spaghnum moss, yet a few minutes exposure to a bright sun and wind will make the roots as dry as hay, and they will surely perish. We shall use the utmost care in delivering the plants to you, and then their success will depend on your care.

You will find a world of pleasure in the business, if you have studied this book carefully, and by following its teachings you will build up a business you will truly enjoy and make a good fortune besides.

THE PACKING HOUSE.

Our packing house was planned and built to give the very best facilities for making up orders, packing plants and getting them to purchasers in the most perfect condition. It is 42x130 feet, and each variety has its own separate stall where the plants are counted and tied in bunches and labeled, so it is impossible to mix varieties.

The atmosphere of the room is kept cold and damp by the floor being saturated with water so that in the short time used in counting plants and making up orders the roots never show the slightest dryness. The crates for packing are made of tough, light wood, after our own design so that leaves are exposed to air while the roots are imbedded in pure, damp sphagnum moss and grow while on their way

OUR EMPLOYEES.

Our family for 1902. About thirty of them failed to get in on time to be "shot." A more intelligent, painstaking set of men and women were never assembled on factory or farm. This is the present status of a small beginning. We never have any bickering or strikes. They love their work, are well paid and this gives us the pick of the city and surrounding country. Many have been with us for years.

to their destination and arrive at any point between the Atlantic and Pacific ocean in perfect condition.

Our men have become experts in packing; each department is under an experienced foreman and all under an efficient superintendent of many years' experience, so that all orders are filled with the utmost precision. It is absolutely impossible to dig and pack plants in the field or open sheds exposed to the sun and wind, as is very generally done by plant growers, and have them reach the purchaser fresh and vigorous. You want every plant to grow and leave no vacancy in the field, and there will be none with these plants, if you set them properly.

NEW VARIETIES.

Our experimental grounds for testing new varieties are carefully conducted. Parties having new seedlings of great promise may send them here and have them carefully tested, and secure a full report of their behavior and, if they prove valuable, we can greatly aid you in introducing them. They may rest assured that no plants will be propagated from them except to improve them by our system of selection and restriction for our new trial beds.

None will be allowed to leave the ground without their consent. It requires at least twenty-five plants for a fair trial. We shall test many hundred seedlings originated through our thoroughbred plants and hope soon to offer some of great excellence, but they must be thoroughly tested under many conditions before they can be offered to the public.

In sending plants be very sure to write your name on the package plain, as well as post office address, and send a letter giving a full description of the plants. Do not send any plants unless you have tested them and know they are seedlings or bud variations of great value.

VARIETIES OF STRAWBERIES.

The great diversity of soils and degrees of fertility, as well as peculiar methods of cultivation adopted by different growers, make it extremely difficult to recommend particular varieties.

Suppose you and a neighbor order twenty best varieties each and put them under the modes of cultivation recommended in this book. You will find one or more sorts which did better than all the others, and this would be the variety you should make your leader; but when you came to compare notes with your neighbor, you would not be likely to reach an agreement as to which were the best sorts. There is a great difference of opinion as to which is the best variety, even on the same ground.

You need several varieties, not only for testing to determine the ones most profitable, but the tastes of your customers will vary fully as much as your plants. You must be prepared to hold your patronage by offering them just what they want throughout the season.

In making up this list of varieties, I have, through my extensive correspondence and published reports of government experiment stations, taken special pains to discard what are called local varieties or those which succeed only in a few localities. Many of the discarded sorts were popular over wide areas, but we have better varieties to take their places.

We have a large number of sorts now on trial and we shall breed them up; and if they develop better qualities, we will substitute them for some of the kinds we now offer, and thus keep only the cream of all the leading varieties on our lists.

THE HOE BRIGADE.

This little army is drilled in the art of hoeing so every motion counts. Pointed hoes are used so that the crust is broken around the plants without disturbing the roots. Frequent hoeing saves money because small weeds cannot then grow big with strong roots. The plants are first irrigated, if weather is dry, then cultivated and hoed, then the tracks of the men cultivated up and the soft mellow mulch holds the moisture while the plants develop at a wonderful rate.

It shall be my business to visit the great fruit centers during the coming summer, and study these new varieties on other grounds and in different localities to learn their good qualities and defects, and thus be able to prune off and add to our list only sorts of the greatest value, and at the same time reduce the number as occasion requires.

The varieties here offered have been selected from many sorts now growing in my experimental grounds as being the very best. They have been widely tested and those introduced within the last few years have been carefully bred up, and are the finest of their kind on the market. Never in my history of nineteen years of study in plant life have I had such perfect conditions in all particulars for plant breeding and testing varieties as at present.

NEW PHOTOGRAPHS.

The photographs of berries were taken again in June, 1903, and show the types of varieties as I believe more accurately than any ever before made. They are photo-engraved and therefore exact with the originals. The strawberry is the most difficult to photograph of all fruits on account of color and shiny gloss on surface. Visitors find many berries in our grounds larger than those shown here. Extremely large berries do not always give the true type and all growers know there are variations in form arising out of various causes.

NUMBER OF PLANTS REQUIRED TO SET ONE ACRE.

Rows	24	in.	apart	and	20	in.	in	the	row, 13,160
"	30	"	"	"	24	"	"	"	" 8,712
"	30	"	"	"	30	"	"	"	" 6,970
"	30	"	"	"	36	"	"	"	" 5,808
"	34	"	"	"	30	"	"	"	" 6,150
"	36	"	"	"	30	"	"	"	" 5,808
"	42	"	"	"	24	"	"	"	" 6,223
"	42	"	"	"	20	"	"	"	" 7,468
"	48	"	"	"	20	"	"	"	" 6,534
"	48	"	"	"	18	"	"	"	" 7,260

THE SEASON OF RIPENING.

The time designated is for the first ripe berries. The season has much to do with this, and several seasons must be considered together to give a variety its true status.

In a long, cold spring the early varieties seem to be held back, while the later sorts come on in usual time, thus bringing them near together and often changing the order of ripening, while an "early" spring hastens the early sorts, and thus greatly lengthens the period of fruiting. The varieties are classified according to record carefully kept, covering a series of years, and I believe are as accurate as it is possible to make them.

Plants have their habits and change them under different conditions. Other nurserymen and fruit growers who depend on one year's experience will, no doubt, classify them very differently.

A look at the prices (see page 61) will show you how, by the use of a very small amount of money, you can start a propagating bed this spring with these pedigree plants, and propagate your own plants for setting a year hence, or, if you wish to buy plants this spring, you can't afford to throw away your money and labor on mongrel plants.

It will pay you big money to adopt the better methods and enjoy the fame of being a leader on the market, and secure a competence for your family and old age.

I point out to you nothing more than I have accomplished, and whereas I have spent many years of hard work and large sums of money in experimenting with these plants, you can, for a very small sum, stock your ground with the same as I have used to produce these large crops.

Send in your orders as early as possible so as to secure the varieties you desire, as all orders will be filled in rotation in which they are received and booked. Write me whenever my experience can serve you.

FRANK E. BEATTY,
Gen. Manager.

LYMAN M. KELLOGG,
Secretary.

OUR NEW COMPANY.

I have for some years felt the necessity of a division of labor and when it was determined to make this farm the national model of scientific culture and development of the strawberry, I looked around for an expert in tillage and general farm management. By his work should I know him. The man who should become the general farm manager here must point to his past to prove his fitness for the future.

Frank E. Beatty, of Covington, Indiana, began the study of one of the first editions of "Great Crops of Small Fruit and How to Grow Them," adopted its methods, ran in debt for land, used his ready money for manure and Thoroughbred Plants and pitched in. Eleven years rolled by and a snug little fortune piled up by big, fancy berry growing. Beatty's celebrated berries commanded the fancy trade within two hundred miles of Covington and while "Beatty named the price," the berries were all contracted for a year in advance. This furnished the proof that he had learned the art of tillage. His plants came annually from Three Rivers and I became to know his mettle and I made him a proposition so attractive that he accepted it and he is now the general superintendent and business manager and permanently enlisted here.

Mr. L. M. Kellogg for twenty-four years a successful superintendent of village and city schools and an enthusiastic botanist and horticulturist, sharing the energetic spirit of his brother in this respect, takes a financial interest and assumes charge of the office work of the institution and customers may rest assured their orders will be methodically and accurately attended to. R. M. Kellogg being relieved of the routine and detail work, but having a general supervision, will now devote all his time to the study of plant physiology and selection and attention to questions of patrons and will be able to minister to their wants more successfully than ever.

Beatty's Trade Mark.

Beatty never spent any time hunting for customers. This Trade Mark and reputation won a surplus of customers and a fortune for Beatty.

FRANK E. BEATTY'S BEAUTIFUL HOME AT COVINGTON, IND.

Beginning with scarce three hundred dollars and following the teachings of "Great Crops of Strawberries and How to Grow Them" accumulates over twenty thousand dollars besides supporting his family in elegant style and then purchases an interest in the R. M. Kellogg Plant Farm and becomes its general manager.

DESCRIBING VARIETIES.

My friends sometimes write me: "I am bewildered. You describe everything as the best. I don't know what to select." I frankly confess that of all the questions that come to me, none puzzle me so much. Every one is the best to some people and not to others. Suppose you have, say, fifteen hundred warm, personal friends whom you have known for years; (we have tested about that number of varieties) and out of them you wanted to select fifty to especially commend to the world. You wanted the fifty you knew were better than the fourteen hundred and fifty culled out. Now, you wanted to describe each one so a person could take their pick out of the whole. To help along you attached a photograph of each person to each description. You could give height, weight, complexion, place of birth, etc., etc., but you could not tell what the friend would do when differently housed and fed and the kind of treatment you were to give him. Some men must be scolded, punched up every minute and fairly whipped into a decent day's work when they are perfectly capable and will stand such treatment right along while another would fly into the air in a second at the first discourteous thing. Some of these sensitive people will stand a great deal of abuse, if you go at them right.

Well, it's just the same with plants. They have their whims and fantastic notions. The purchasers have theirs. Some people are harsh with their plants. Some varieties will stand harsh treatment, if you go at them right and still will give bountiful crops. I have sometimes felt that I would rather have the description of the man who was going to grow the plants than have the description of varieties and soil, because some persons fail under any circumstances and some succeed under any conditions.

The fifty-three varieties are National in their character and you cannot make a great mistake in selecting any of them after reading the description given and yet as already stated, you will like some better than others just as you like some human friends better than others.

The only thing I can do in answer to all these questions is to repeat what I have already said in the description given. I have my friends in the list, but they might not prove your friends. I cannot tell how you will treat them or about your soil and location. I do know that these plants are thoroughly developed and are succeeding from the Arctic Circle to South America and all over the Continent as well as Europe where any vegetables grow.

THREE RIVERS POST OFFICE AND RURAL ROUTES.

The rural routes deliver plants by mail. Find an application for money order enclosed. Select the varieties desired and send in early and at the proper time the plants will be in your letter box as fresh and green as if you were not ten miles away. We send them across the ocean to Europe, Nova Scotia, British Columbia and even to Alaska, South American countries and far off Australia and New Zealand. Postage in United States five cents per dozen, twenty-five cents per hundred. Canada, double these rates. Send this amount for postage with your order.

SEASON OF 1903.

The only good thing about the season of 1903 was fancy prices and crushing demand and this would have been the same, if ideal climatic conditions had prevailed, for when high wages prevail the demand will always exceed the supply.

Few old grey headed men will recall a season so unfavorable as the past spring. In the West an April drought followed by dreadful floods and coldest June known with several killing frosts, when berries were in full bloom, and then cloudy weather much of the time, shutting off sunshine which is the mechanical force in plant growth and added to this were the continuous floods and we have the Western conditions.

In the East floods in early April and then beginning in the middle of the month followed a drought of fifty four days with hot weather making it impossible to keep new set plants alive only by most careful setting and frequent tillage and this followed by cold rains througout the season, while at the South a protracted drought did much damage.

Thoroughbred Pedigree Plants showed their breeding under these trying circumstances. Possessed of a strong constitution and a perfectly developed fruit organism they were not to be defeated by a first, second, or third heavy freeze, but proceeded at once to build up a new set of buds each time and gererally produced a heavy crop despite wind and weather just as they always do on rich ground and under good tillage. As a general rule, where first buds were killed by frost and more especially the second and third time, the berries will not be so true to type and always more or less deformed.

We ought not to expect another bad season to follow the two poor ones just passed, but rely on timely rains and sunshine and quality and prosperity for big prices.

DOLLARS AND "SENSE."

It is important that you comprehend the difference in profits between intensive fruit growing as taught in these pages and the common methods of the average fruit grower. Take one thousand bushels of berries as the basis of calculation for comparison.

This is "Daisy," one of the cows of the dairy of Hon. Levi P. Morton, ex-vice president of the United States. The most famous dairy in the world, built up by long years of thorough breeding. Bad breeding and bad feeding, with bad milking would change them back by permanently destroying their now perfectly developed milk glands. The fruit producing organs of a plant can and are built up substantially the same way and are as easily destroyed by bad treatment, proving conclusively that big profits come only from Thoroughbred Plants.

The average crop under ordinary methods is from seventy-five to one hundred bushels per acre, and so to produce the 1,000 bushels you must furnish and fit at least 13⅓ acres of land. You must then buy and set 93,300 plants (7,000 to the acre). The cost of picking and marketing berries grown in the old way is always greater because you must go over so much more land for the same amount of fruit, and on the market you must accept what the purchaser sees fit to pay. You cannot secure regular customers at an extra price for common fruit.

To produce one thousand bushels by these improved methods and basing calculations on my own experience. I should not think of using over four acres of land (250 bushels per acre), and should therefore have to purchase and set only 28,000 plants. My crops have rarely dropped as low as that and have exceeded five hundred bushels per acre. Now I should sell this fancy fruit at from three to five cents per quart more than for the common fruit grown by the old method, and can hold regular customers who are glad to get this grade of fruit at the advance price.

While it does cost some more work to give this intensive culture, yet the **extra price of $960** received for the fruit would pay for the entire cost of plants, use of land, manuring, marketing, etc., and leave me more than the gross price of common fruit for net profits.

As these plants would be grown in hills or hedgerow they would not become so much exhausted by seed or fruit bearing, and would produce large crops for three or four years, while by the old way the beds generally cease to be profitable after the second year and must be plowed under and re-set.

These comparisons are not exaggerated, for in this calculation I have taken the average estimate of common crops—75 bushels per acre—and the smaller amount grown by the improved method—250 bushels per acre—and the lowest per cent. of gain on quality—3 cents per quart, which gives a very conservative comparison.

To these profits you should add the pleasure of being known as the most enterprising and successful berry grower in the community.

I have often grown enough berries on a single crop to pay for the land and entire cost of growing, including plants, manuring and all labor.

Cheap plants must of necessity be grown cheaply. When you come to divide up the sum of $1.25 between use of land, fertilizing, cost of original plants, setting, cultivating, mulching, digging and packing 1,000 plants, cost of catalogue and advertising, as well as meeting

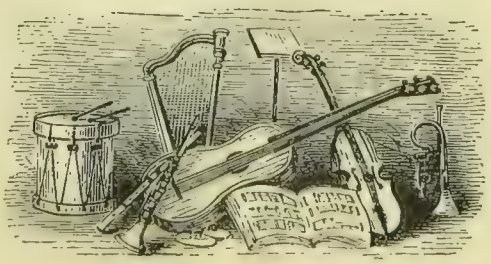
Photograph of the berry field of John Baker, of Kane County, Ill. Beginning with almost nothing but pluck and energy he has paid debts, and writes me he has a handsome bank account and beautiful home for all of which he says he is indebted to "Great Crops of Strawberries and How to Grow Them." He has always used thoroughbred Pedigree Plants.

general expenses incident to doing business, each expense account must be cut down to a few cents, to balance income. It can only be done with plants having the viney habit, raked out with potato hooks, counted and packed by child or other cheap labor in the open field or some open shed exposed to sun and wind, since that price will not permit the erection of suitable buildings for the purpose, and hiring a better class of labor.

THE POOR BERRY GROWER.

The very poor berry grower is poor because he surrounds himself with poor home on poor soil, uses poor tools, poor seeds, poor plants, gives poor cultivation and always has a poor crop of poor fruit and sells to poor people who are contented to buy poor stuff if it's "cheap" and thus he remains always and eternally poor.

You must have dash! First study the field to get your bearing and then throw your whole being into the charge. Make it move. If you are a lazy good-for-nothing fellow and can't find pleasure in surrounding your home with comforts, and would not enjoy the approval of your neighbors by being somebody and doing something above the ordinary, then in all goodness don't change, but tag along just as you are.



THE FIRST AND SECOND FIDDLER.

The first fiddler is a high priced fellow. He has won a reputation for furnishing fine music and he need not and will not play for less than $25 per night—often much more than that. They send for him from far and near. He takes pride in his business, uses only the best fiddle to be obtained, and never furnishes second-class music. He finds a world of pleasure in his business has a delightful home and pleasant surroundings, with a good bank account and looks at his whole life work as a magnificent entertainment.

The second fiddler, with which the world seems abundantly supplied, plays for his supper (generally the second table), and picks up

Ex-Sheriff Snyder, of Indiana, sends a photo of his berry fields. He commands the fancy trade and advertises his berries with large photographs as of superior quality grown on Kellogg's Pedigree Plants.

Photograph of an ideal mother plant selected and restricted for propagation. A one-and-a-half bushel basket could not be turned over it without doubling up the leaves. Visitors see hundreds of them at fruiting time.

such odd jobs as he can get a pittance for doing, lives in a hovel, wears poor clothes and sees disappointment and gloom everywhere.

Young man, do you see a moral in this comparison? Look around you and see how many "second fiddlers" there are in the berry business in your community. Ask your grocer who is growing strictly fancy fruit and you will be surprised at his answer.

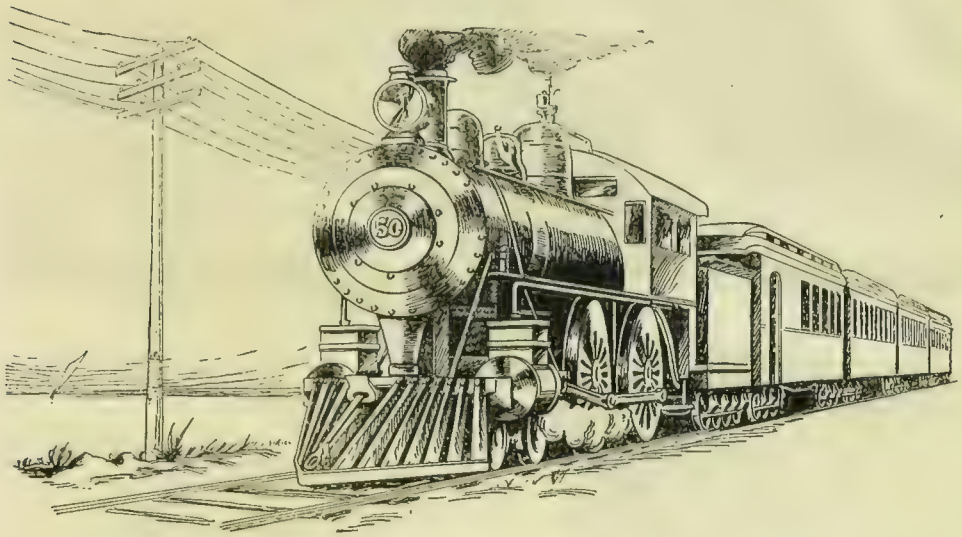
Do you not see an opening for a clean, neat and profitable business? Don't be a wage earner all your life, but get the best piece of land you can and stock it with thoroughbred plants and pitch in. Don't play second fiddle.

If there is anything you don't understand write me full particulars and my experience is at your service. It affords me a world of pleasure to give pointers and boost a young man into place as "first fiddler" in the berry business.

Henry Hess, of Moody County, South Dakota, in his fields of fancy berries. Always uses thoroughbred plants, and is making a remarkable success.

C. A. Cowan, Madison Co., Ill.—I will write to you to say I received my order this spring in good time and splendid condition. I was surprised at such fine and well packed stock. I have set all out and have lost only two plants. You will receive another order from me next spring. I shall take great pleasure in recommending your stock.

I. R. Armstrong, M. D., Kossuth Co., Iowa.—I am surprised at the wonderful success you are having in developing small fruits of all kinds. You give full particulars in your catalogue how to do everything in the line of raising small fruits. I am glad that we have such a man to lead out and go to the bottom of the science of small fruit raising. In fact, I am always pleased with the man who puts brain and nerve in the business he undertakes, and makes a grand success as you surely have done.



TEN DOLLARS PER DAY AND FREE EXCURSION TO THREE RIVERS.

Certain parties have circulated stories that this establishment is not what it is purported to be and that we are not breeding our plants in the skillful manner pointed out in these pages. For years everybody has been invited to visit our grounds and see the work going on. They have come from every state in the Union in great numbers and have seen with their own eyes and have gone away delighted. Not only fruit growers, but men of the highest professional standing in the country have visited us and in every case have given me the highest commendation for the perfect system and thoroughness with which the work goes on.

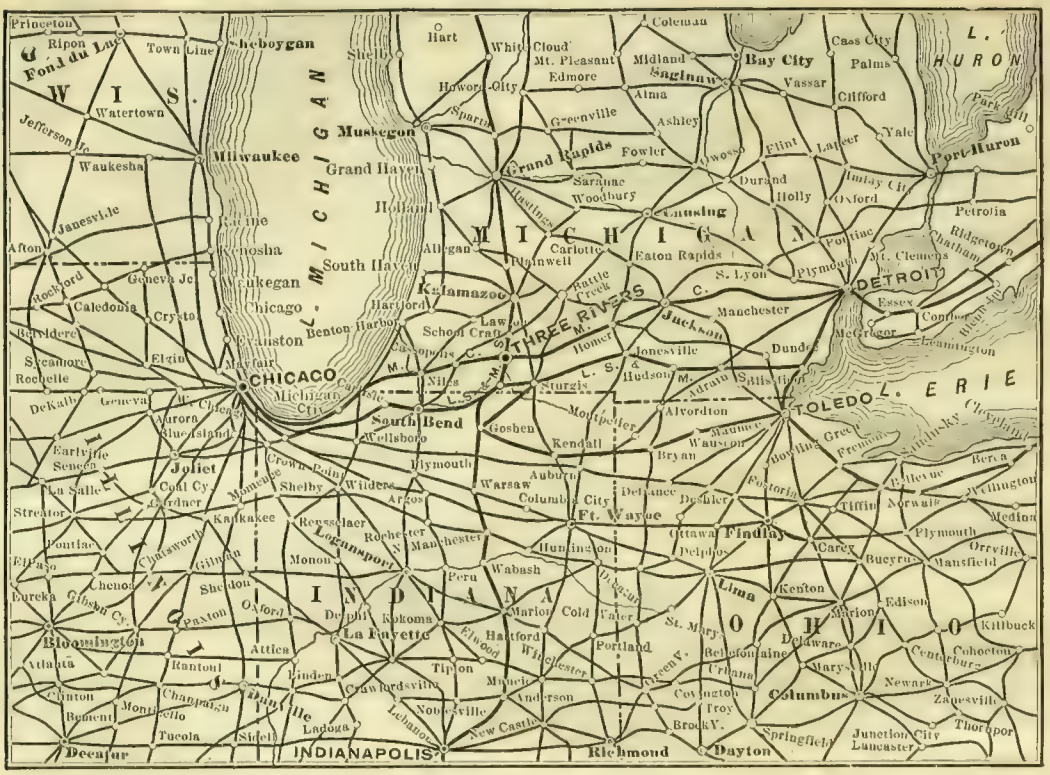
Now to set at rest these "Doubting Thomases" I hereby agree to pay to any person residing in the United States as follows:

Take the finest train, stop at the best hotel, sleep in the best car and come to Three Rivers and inspect carefully this entire institution, ask any and all the questions you choose and, if you can show that every statement is not being carried out just as represented in this book, I hereby agree to pay all expenses as above and the further sum of ten dollars per diem from the time you leave home until you arrive back to your home, you going and coming direct.

If you find everything just as stated and fail to find any misstatement in these pages, then you pay all your own expenses, except while here. We always entertain our visitors free of charge and either the superintendent or myself will conduct you over the grounds and explain everything. We claim and are ready to show any person that we have expended a larger sum of money in getting ideal conditions and that we are giving more labor in tillage and means to develop and make better plants than any other persons on the continent; not only so, but we shall in the future not hesitate to incur any outlay that will contribute to the betterment of these plants.

The berry pickers of J. O. Statts, of Vermillion, Co., Indiana, who enjoys the reputation of being the leading berry grower of the county. He writes: "We follow your teachings to the letter."

H. R. Wayman, Mercer Co., Mo., sends a photo of his berry fields and expresses his pleasure at results and tells of immense crops of big berries as positive proof of success in thoroughbreeding in plants, followed by thorough tillage commended in "Great crops of Strawberries," etc.



THIS MAP shows our location in the Michigan Fruit Belt on two great railroad systems, with several fast through express trains daily, delivering freight the same night it leaves here to Chicago, Toledo, Indianapolis and Detroit, where plants are sent in fast through frights to St. Louis, Kansas City, Omaha, St. Paul, Cincinnati, Cleveland, Buffalo and all intermediate points.

Place your orders early so that plants may be sent while dormant and weather cool. If to be forwarded by freight, it is advisable to confer with your local freight agent as to time from above named points. Give full directions and route for shipment.

Special Notice. Please note the fact that express companies give a special discount to nurserymen of twenty per cent. and pound rates, so that you pay only the exact number of pounds the packages weigh; thus you can send here for your thoroughbred strawberry plants and elsewhere for any bush fruits you may want without any additional expense for expressage.

GETTING RICH.

Getting rich is an art. Few men get rich on a salary. They must take something costing but little, and add to it brains and muscle and make it worth a great deal. They must produce something out of the common that sells at a large profit. Some men quickly get a home and pay for it and surround themselves with luxuries, and find a good deal of pleasure in life, while others work hard every day and plod on to the end of life without a home or common comforts.

One man pays half a cent for a strawberry plant, puts it into rich land, adds a little labor to it, and it returns to him two to four quarts of high priced berries, and the whole field being covered with the same, he finds it easy to pay bills and at the close of the season he adds a good sum to his bank account.

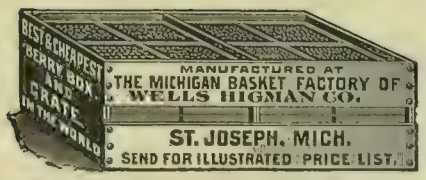
Another man gets his plants for a quarter of a cent, and gives it the same labor and land, and finds too late that it has no fruit producing system, but runs all to foliage and barely yields a pint of berries which sell for a low price after a great deal of begging for a purchaser. He finds at the close of the season the entire receipts consumed in paying running expenses, and gets nothing for his own labor. About the only pleasure he gets out of it is that he saved a quarter of a cent on his plant, which the other man paid.

How much did that quarter of a cent cost him? It looks as if it might be forty cents.

It's a good plan to study the habits of rich people. You notice they always buy the very best, not because they **are** rich, but because that is the way they got rich.

Did you ever hear of a person getting rich who always bought cheap stuff? Nothing is truly cheap which consumes labor and in its nature can give only a poor return.

It is all right to work by the day till you get a start, but it is delightful to be your own master and run your own business.



A 16-Quart Crate Filled With Boxes.

BASKETS AND BERRY BOXES.

For many years past we have bought all our fruit packages of the Wells Higman Co., of St. Joseph, Mich., and knowing them to be among the most extensive and reliable manufacturers in their line I take pleasure in recommending them to any one who may be in need of any berry boxes or other shipping packages. Their goods are strictly first-class, and fruit growers who are not acquainted with this firm should correspond with them. They will mail their illustrated catalogue free on application.

They are headquarers for Grape, Peach, and Melon baskets.

COPY OF ORDER.

Always Keep a Copy of your order. See that your order is on file at once so you will be sure to get all the varieties wanted and have your plants come early.

You will find a world of pleasure in studying plant life, and in this we wish you a hearty God speed.

Send for our special catalog of garden tools and cultivators.

Memorandum of Plants Ordered, Date.....

NUMBER OF PLANTS	VARIETIES.	PRICE $	PRICE Cents

PRICE LIST OF STAWBERRIES.

These prices are for the number of plants named. We do not combine varieties to make up any given number. Not less than twelve of any variety of strawberries will be sold, as less than that number is not sufficien for a fair test. No order accepted for less than $1.00.

VARIETIES.	For 12	For 25	For 50	For 100	For 200	For 300	For 400	For 500	For 1000
EXTRA EARLY VARIETIES.									
Johnson's Early (B)	$0 20	$0 25	$0 30	$0 60	$0 95	$1 25	$1 50	$1 75	$3 50
August Luther (B)	20	25	30	60	95	1 25	1 50	1 75	3 50
Excelsior (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Michel's Early (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Palmer (B)	30	45	75	1 50					
Texas (B)	25	30	35	70	1 20	1 65	2 10	2 50	5 00
EARLY VARIETIES.									
Bederwood (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Clyde (B)	20	25	30	60	95	1 25	1 50	1 75	3 50
Cumberland (B)	20	25	30	60	95	1 25	1 50	1 75	3 50
Lovett (B)	20	25	30	60	95	1 25	1 50	1 75	3 50
Tennessee Prolific (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Wolverton (B)	15	20	25	50	75	1 00	1 25	1 50	3 00
Crescent (P)	15	20	25	50	75	1 00	1 25	1 50	3 00
Warfield (P)	15	20	25	50	75	1 00	1 25	1 50	3 00
MEDIUM VARIETIES.									
Lady Thompson (B)	20	25	30	60	95	1 25	1 50	1 75	3 50
Ridgeway (B)	20	25	30	60	95	1 25	1 50	1 75	3 50
Glenn Mary (B)	20	25	30	60	95	1 25	1 50	1 75	3 50
Wm. Belt (B)	20	25	30	60	95	1 25	1 50	1 75	3 50
Splendid (P)	20	25	30	60	95	1 25	1 50	1 75	3 50
Parson's Beauty (B)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Klondike (B)	30	45	75	1 50					
Monitor (B)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Miller (B)	25	30	35	70	1 20	1 65	2 10	2 50	5 00
Nick Ohmer (B)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
New York (B)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Up-to-Date (B)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Senator Dunlap (B)	20	52	30	60	1 00	1 35	1 70	2 00	4 00
Haverland (P)	20	25	30	60	95	1 25	1 50	1 75	3 50
Enormous (P)	20	25	30	60	1 00	1 35	1 70	2 00	4 00
Kansas (P)	20	25	30	60	1 00	1 35	1 70	2 00	4 00

PRICE LIST OF STRAWBERRIES, Contd.

VARIETIES.	For 12	For 25	For 50	For 100	For 200	For 300	For 400	For 500	For 1000
Hero (B)	25..	30..	35..	70..	1 20..	1 65..	2 10..	2 50..	5 00
Downing's Bride (B)	40..	75..	1 25..	2 50					
Granville (B)	40..	75..	1 25..	2 50					
Sutherland (B)	40..	75..	1 25..	2 50					
President (B)	50..	85..	1 50..	3 00					
Challenge (B)	50..	85..	1 50..	3 00					
Arizona, Ever-bearing (B)	50..	85..	1 50..	3 00					
LATE VARIETIES.									
Aroma (B)	20..	25..	30..	60..	95..	1 25..	1 50..	1 75..	3 50
Brandywine (B)	20..	25..	30..	60..	95..	1 25..	1 50..	1 75..	3 50
Bismark (B)	20..	25..	30..	60..	95..	1 25..	1 50..	1 75..	3 50
Gandy (B)	20..	25..	30..	60..	95..	1 25..	1 50..	1 75..	3 50
Dornan (B)	25..	30..	35..	70..	1 20..	1 65..	2 10..	2 50..	5 00
Marshall (B)	20..	25..	30..	60..	1 00..	1 35..	1 70..	2 00..	4 00
Maximus (B)	20..	25..	30..	60..	1 00..	1 35..	1 70..	2 00..	4 00
Parker Earle (B)	20..	25..	30..	60..	1 00..	1 35..	1 70..	2 00..	4 00
Parker Earle Improved (B)	20..	25..	30..	60..	1 00..	1 35..	1 70..	2 00..	4 00
Rough Rider (B)	20..	25..	30..	60..	1 00..	1 35..	1 70..	2 00..	4 00
Bubach (P)	20..	25..	30..	60..	1 00..	1 35..	1 70..	2 00..	4 00
Seaford (P)	20..	25..	30..	60..	1 00..	1 35..	1 70..	2 00..	4 00
Sample (P)	20..	25..	30..	60..	1 00..	1 35..	1 70..	2 00..	4 00
Oregon (B)	40..	75..	1 25..	2 50					
Midnight (B)	50..	85..	1 50..	3 00					
Mark Hanna (B)	1 00..	1 75..	2 50..	5 00					
Mrs. Hanna (B)	1 00..	1 75..	2 50..	5 00					

Roller Runner Cutter.....

These tools can be shipped with plants.

In making out your order, please observe that there is but one price and that for the quantity stated. All customers are treated alike. There are no discounts. They are the best plants I have ever seen, and the prices stated are the lowest at which they can be furnished. All orders sent by mail require postage added to cost of plants. See "Notice to Patrons" inside back cover. All orders not correct when received are held for correction, and lose their turn on our files until correction is made. Be very careful to get prices right.

R. M. KELLOGG, THREE RIVERS, MICHIGAN. **SEND ORDER ON THIS SHEET.**

Write number of plants on left of varieties.
Write all Questions on a Separate Sheet.

Name.....
(VERY PLAIN)

Post Office..... *Rural Route No.*.....

County..... *State*.....

Name of Town for Freight or Express..... *Ship by*.....
(Say whether to be sent by freight, express or mail)

NUMBER OF PLANTS	VARIETY	PRICE $	PRICE cts.	NUMBER OF PLANTS	VARIETY	PRICE $	PRICE cts.
	EXTRA EARLY						
	Johnson's Early B				Hero B		
	August Luther B				Downing's Bride B		
	Excelsior B				Granville B		
	Michel's Early B				Sutherland B		
	Palmer B				President B		
	Texas B				Challenge B		
	EARLY				Arizona B		
	Bederwood B				**LATE**		
	Clyde B						
	Cumberland B				Aroma B		
	Lovett B				Brandywine B		
	Tennessee Pro. B				Bismark B		
	Wolverton B				Gandy B		
	Crescent B				Dornan B		
	Warfield				Marshall B		
	MEDIUM				Maximus B		
	Lady Thompson B				Parker Earle B		
	Ridgeway B				Parker Earle Imp. B		
	Glenn Mary B				Rough Rider B		
	Wm. Belt B				Bubach P		
	Splendid				Seaford P		
	Parson's Beauty B				Sample P		
	Klondike B				Oregon Iron Clad B		
	Monitor B				Midnight B		
	Miller B				Mark Hanna		
	Nick Ohmer B				Mrs. Hanna B		
	New York						
	Up-to-Date B				Runner Cutter		
	Senator Dunlap B						
	Haverland P				Amount in first col.		
	Enormous P						
	Kansas P				Total amount sent		
	Total first column						

TESTIMONIALS.

Chas. W. Woods, Emmet Co., Ia.—Enclosed find order for plants. I have had splendid luck with your plants. I sell berries for fifteen cents while others get only ten cents and I cannot supply the demand at that. Enclosed find clipping from newspaper.

"Talking about strawberries, one is reminded of the fact that there are strawberries and strawberies. But the finest strawberries we have ever seen were some grown by Charles Woods. The Vindicator was remembered with a box of them. Now a quart of these berries are not very many for it takes only a little over a dozen of them to make a quart. But they are simply delightful. Mr. Woods has about a fifth of an acre in berries and will pick therefrom nearly 1,000 quarts. It is doubtful whether there is a place in the whole world where finer berries can be grown than here in Emmet Co."

John D. Montgomery, Daviess Co., Ind.—Two years ago I sent you $1.00 for strawberry plants. That was the best dollar I ever invested. We got forty gallons of berries last year and they were pronounced by my neighbors the finest they ever saw and now they want me to send for some for them. Enclosed find their order.

D. B. Mitchem, Vernon Co., Mo.—As you know, I was one of the first men in Vernon Co. who bought R. M. Kellogg's thoroughbred strawberry plants and from that day until now I have been fighting for R. M. Kellogg's thoroughbreds. If prices are not too high I can get every order in the neighborhood for you this spring. This man sent in a $50.00 order for plants.

Thos. S. Phillips, La Crosse Co., Wis.—There is no danger of my using Mongrel plants as I am spoiled for that since getting your pedigree plants. Those I got last spring are a marvel. There is nothing like them in this part of the country. You may depend upon it, when I need more you will hear from me.

Mrs. A. M. Burch, St. Clair Co., Mo.—I ordered plants of you three years ago, set them in hills and from 234 hills picked 280 quarts of very fine berries. I had calls for them after they were all gone. I will send for enough this spring to give all my neighbors a taste as my berries were so nice last year.

L. L. Holloway, Jefferson Co., Ky.—The plants you sent me last year did fine as dry as it was. I am a preacher and wherever I go I talk your plants and methods. I live in a great berry district near Louisville. I want everybody to get your book.

R. C. Edwards, Washington Co., Kans.—The plants I got of you were just as represented in every respect. I set one half acre and harvested 3,000 quarts of the finest berries I ever saw which I sold at ten cents per quart, and could not supply the demand. My neighbors laughed when I set the plants and said Edwards was fooling his time away. When they saw the berries the one who made the most fun said he would stick to it theses were apples, not strawberries.

M. C. Lewis, Bartholomew Co., Ind.—The plants I got of you two years ago were fine and every one lived although it did not rain for two weeks after setting them out. I have confidence in your way of packing for shipment to give you so large an order. A great many nurseries do not know how to ship strawberry plants.

John Weedmer, Doniphan Co., Kans.—I have bought small fruit plants of you several times and they have always been what you claimed for them and have given the best of satisfaction. I send you another order for $20.00.

C. L. Lathrop, Crawford Co., Wis.—I was greatly surprised when visiting your farm to find so large a place so well tilled and managed. Everything moved like clockwork. Not a weed on the place and not a plant allowed to suffer for food or water. It did me good to see all this. I went 400 miles but was well paid.

M. N. Kimble, Hall Co., Neb.—I have made out an order to-day for your plants. I have already got the reputation of being the "Great Strawberry Man" in this county. I never go to town without people ask me "How are the strawberries?" and I am taking orders by the crate even now (Jan.) for next summer. I have built up a fine property. All my buildings are kept painted and photographers come out to take views, all of which helps to sell my berries. I am after all there is in it.

E. R. Gleason, Blair Co., Pa.—I have just finished harvesting one half acre of strawberries from the plants bought of you last year and find I have sold 83 bushels at $3.78 per bushel which netted me $247.34 above all expense. So you see I did pretty well for a beginner. This yield came chiefly from 1500 of your thoroughbred plants.

W. B. Reed, Stearns Co., Minn.—We have been picking berries from your plants for several days. They are the finest ever shown in this city and there is no end to the demand for them. The "high gentry" drive out and look over my patch. I try to bear all the flattery they give me modestly but when they ask where the plants came from I give them your address so you get a share of the praise which is where it belongs, share and share alike.

O. O. Penny, Portage Co., Wis.—I have just harvested an immense crop of strawberries grown on Kellogg's Pedigree plants. They brought me ten cents per box when others were selling at six and seven cents. One grower said it was no use to bring beries to this market for Penny had raised the standard so high there was no use for others to attempt to compete with him. The reputation of my fruit has reached the northern part of the state but I did not have enough berries to supply them. I shall double my acreage next year.

D. R. Orbison, Boxelder Co., Utah.—I thought it best to send in my order early to insure getting varieties wanted. As soon as I find which varieties do the best on my ground I shall plant extensively and will want you to supply me with what I need. I bought plants of you when I lived in Ohio and know they are worth ten times the ordinary scrub plants.

Wm. Richardson, Kalkaska Co., Mich.—I have just picked the best lot of berries from plants bought of you that has ever been sold on this market. I could have sold double the amount. The neighbors that saw the fruit were all surprised and wanted all the plants I had for sale. But I do not grow plants from bearing vines. Shall send to you for plants next spring and shall direct the ones who wish to buy plants to you.

J. W. Lewis, Meade Co., Ky.—Last spring (1901) I had the most beautiful patch of strawberries ever seen in this section from plants I got from you. When in full bearing it was a sight worth seeing. A number of my friends visited my grounds while we were picking the berries and all declared it to be the largest yield and finest berries they ever saw. I was so proud of my success with your plants.

Thos. L. Rigg, Hardin Co., Ia.—I wish you could see the plants I bought of you last spring. They have made a wonderful growth. This summer (1901) was a fearfully severe one on young stock. Planters here lost nearly all they put out. Your stock was an exception. Your pedigreed plants grew and thrived despite the severe drought and hot winds and made plants as big as a potato hill. An Iowa nurseryman who inspected my grounds was greatly surprised. When I told him the plants came from you he said, "Well, if you got them from Kelllogg of course they are all right." In fact, my beds of your plants is proof positive of the truth of your theory. You have given me the best plants I ever bought and I have bought a heap of them. Your plants are so far superior to others that I think it my duty to tell about them in my articles in the poultry press.

J. S. Galliet, Brown Co., O.—I have recommended you and pour plants and pamphlet to numerous persons. A friend asked me where to get the best strawberry plants. Of course I told him at R. M. Kellogg's. I told him to first send for your pamphlet, then by studying that he would know how to take care of the plants. They all ask me because I am a Gardener and have [illegible] plants and fruit for several years.

John B. Wolfkill, Washington Co., [illegible] wberry plants got of you are worth much m[illegible] e from other nurseries. Many people who saw th[illegible] could pick out your plants to the last one as they s[illegible] twice the growth of the others and I lost fewer i[illegible].

Geo. Noell, Henry Co., Ill.—It was amusing [illegible] natives—when they saw my berry patch last sum[illegible] they opened their eyes and they had to open the[illegible] pretty wide to get some of the berries in. I am a [illegible] ner, but I began right by getting good plants.

James E. Hall, Johnson Co., Mo.—I have been u[illegible] your plants for the last six or seven years and find them to be just as represented. Have never had a failure since I began using them even as dry as the season was last year. No rain from April 27th to July 29th; but my crop yielded 525 bushels which brought me $500.00 above all expenses from two acres of ground. I had the finest berries on the market.

R. C. Trowbridge, Onondaga Co., N. Y.—My plants bought of you are a great success. I sold this year from one-fourth of an acre $90.00 worth of berries. Please accept my sincere thanks for the many favors granted me in answering questions, etc.

R. L. Hogg, Elizabeth City Co., Va.—We had one acre of strawberries bought of you, in hedge-rows which yielded 9,000 quarts although there was no rain from the time they blossomed until fruiting was nearly over. The yield was due to narrow rows of strong plants, good cultivation, fertilizing and mulching.

NOTICE TO PATRONS.

The plants herein offered are propagated from **PURE PEDIGREE STOCK** and ideal plants, as explained in the chapters on "Improvement of Plants." I am confident they are the only plants obtainable propagated in this manner, and that their fruiting vigor cannot be equalled. While I practice the highest cultivation I know how to give, I have demonstrated that the vigor of my plants has been the basis of my success. By all means start a propagating bed this season.

ORDERS MUST AMOUNT TO ONE DOLLAR.

The correspondence, postage, booking and filling orders for less than that amount is done at a loss.

TAKING UP STRAWBERRY PLANTS.

The whole row of plants is taken up, and all those poorly rooted are thrown out. The fork used for the purpose is so constructed that plants are not bruised or roots broken off. All dead leaves and stems are picked off and roots straightened by such a system that from the time they leave the ground until they are ready for shipment they are not exposed a half minute all together.

SUBSTITUTION.

We desire to furnish each customer exactly what he orders, but sometimes find the variety all sold before his order is reached, all orders being filled in the rotation in which they are received and booked. If no substitution is permitted we are obliged to disappoint the customer by returning the money late in the season. There are several varieties in the same season and of equal value, and if we are out of the variety ordered and substitution is permitted we will add 10 per cent to the plants substituted. Unless you expressly state "No SUBSTITUTION," we will understand you desire your order filled as above stated. There is very little danger of not getting the varieties desired, if orders are sent in early.

PRICE OF PLANTS.

The prices quoted are net, and the lowest at which they can be grown and placed on the market. This list abrogates all former price lists. No charge will be made for packing, crates, or boxes, and delivery to forwarders. No plants sold for fall planting. Not less than one dozen strawberry plants will be sold, it requires that number for a fair trial.

NO AGENTS.

I employ no agents. Scores of complaints come to me every year saying, "The plants I bought of your agent are worthless." Tree peddlers secure copies of this book and represent themselves as my agents and then deliver mongrel stock to the loss and disgust of purchasers. Put all such parties down as frauds. You can only get the genuine thoroughbred plants by sending direct to me. Strawberry plants will not endure the exposure of handling with trees and other plants in delivering orders and carrying around the country after the packages are opened.

MAKE UP A CLUB.

Join with your neighbors in getting up a club and get the benefit of thousand rates. Each bundle being labeled the division is easily made. Catalogs will be sent to your neighbors on request, to aid in making up the

TERMS

Only cash with order. No orders are booked unless one-third the amount is remitted and balance before shipment.

ORDER EARLY.

All orders are filled in the rotation in which they are received, hence the earlier they are sent in, the better.

HOW TO REMIT.

Send money by postoffice order, bank draft, express order, or registered letter. I cannot be responsible for money sent loose in a letter. When private checks are sent, add 15 cents to cover the cost of collection.

REFERENCES.

All banks, wholesale houses and manufacturers use the Commercial reports of R. G. Dunn and Bradstreet and you can see them by request. These reports place my capital at $35,000.00 and credit rating the highest given any one on that amount of capital.

Special references—First National Bank or any merchant in this city.

PLANTS BY MAIL.

The postage on strawberry plants to any point in the United States is five cents per dozen and twenty-five cents per hundred, which must be added to the price and remitted with the order. To points in Canada postage is double these rates.

The plants are packed in moss and go perfectly safe, arriving in perfect condition. We send plants by mail only at price by the dozen and hundred, and not at thousand rates.

EXPRESS RATES.

Express charges are twenty per cent less than general merchandise to any part of the country. All small orders are generally cheaper by express than freight, as only pound rates are charged, while railroads charge for 100 pounds without regard to weight when sent by freight.

FREIGHT.

Our railroad connections are first-class. Plants leaving here at six o'clock in the evening arrive in Chicago, Toledo and Detroit the same night, and from these points they go in fast through freights to all principal cities and intermediate points. It is seldom they fail to arrive on time, but sometimes delays occur, and when notified they are behind time, we hurry them forward by telegraphic tracers. We advise purchasers to consult local freight agents as to time and give the route over which you wish them sent by freight. If no shipping directions are given, we exercise our best judgment without assuming any responsibility.

GUARANTEE OF GENUINENESS.

The plants being propagated in special beds and labeled when taken up, would seem to preclude the possibility of mistake, and I guarantee plants to be true to label, with express understanding that if a mistake happens I am not to be held for any damages beyond the amount received for the plants.

GUARANTEEING RESULTS.

We send plants to the most distant states, with entire success, to anybody and everybody who orders them. I am exceedingly anxious that they shall meet their highest expectations, and to this end will do all in my power to contribute to success. But after they are delivered to express companies or railroads, they belong to the purchasers and I have no control over them. I do not know what treatment they are to receive, hence you can readily see why I cannot, and do not, guarantee any results whatever. My responsibility ceases when delivered to express or railroad.

CLAIMS.

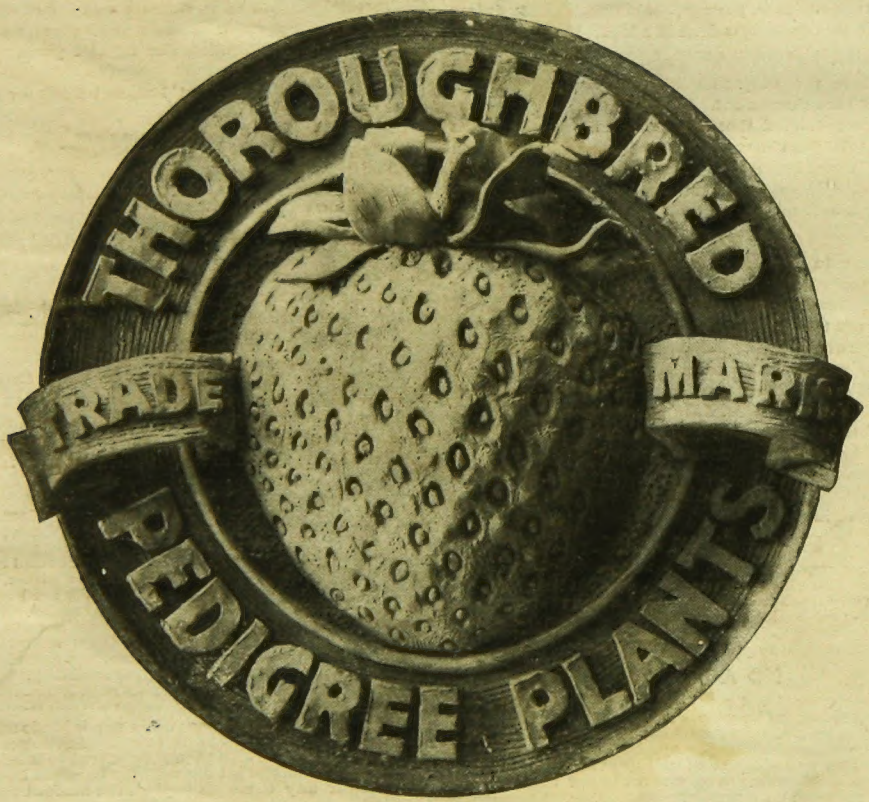
All claims must be made within five days of the receipt of plants, when they will be investigated and if not found correct will be promptly adjusted.

ORDERS ARE ACKNOWLEDGED

as soon as received. If you do not hear from us after a reasonable time, write again.

NOTICE.

This Booklet will be revised every year, and sent out free to all who are interested in it. Do not loan it but keep it for reference. If you want one sent to a friend, send his address on a postal card, and we will mail it with your compliments, so he will know who sent it. Our object is to place fruit growers in possession of such facts concerning plant life and the laws which govern the development of fruit as will enable them to suceed. My success depends on your success The number of copies one person can order is limited to four.



THEY GROW
BIG RED BERRIES